August 1974 Number 360-Part I

Solar-Geophysical Data prompt reports

Data for July 1974–June 1974

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA SERVICE / ASHEVILLE, N.C.

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Solar - Geophysical Data

NO. 360 AUGUST 1974

Part I (Prompt Reports)

DATA FOR
JULY 1974
JUNE 1974

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR - GEOPHYSICAL DATA

No. 360

Issued in two parts

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F.1e	Cosmic Ray Neutron Counts (Alert)	350	351	352	353	355	356	357	357	358	359	360	
F.1f	Cosmic Ray Neutron Counts (Calgary)	350	351	352	353	354	355	356	357	358	359	360	
F.1g	Cosmic Ray Neutron Counts (Sulphur Mountain)	350	351	352	353	354	355	356	357	358	359	360	
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For explanations of the data contained herein see *Descriptive Text* published as supplement to February 1974 *Solar-Geophysical Data* (Number 354).

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

JULY 1974

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS).

Boulder 012200Z Tenflare 264 FU 012155Z in progress

Boulder 030530Z Soflare 2B S15E08 030304 in progress

Boulder 040540Z Magstorm begins 040119Z Polcap absorption 032300Z 1.8 DB

Boulder and Algonquin Radio Observatory 041354Z Soflare 1B S16W12 041350Z duration 27 minutes. Tenflare 1586 units 041354Z still in progress

Boulder 041805Z Tenflare 184 FU 041703Z ended 1736Z

Boulder 041830Z Tenflare 789 FU 041824Z in progress

Boulder 042115Z Tenflare 330 FU 042058Z in progress

Boulder 051512Z Tenflare 471 FU 051511Z in progress

Boulder 051635Z Weak magstorm in progress 051630Z. Polcap absorption 051500Z 3.5 DB Thule 30 MHz. Proton event 051250Z Enhancement began. 40X background at 18-38 MeV from GOES satellite at 05/1630Z

Boulder 052205Z Soflare 2B S16W23 052118 in progress 75 percent umbral coverage, suspected proton flare. Tenflare 2600 FU 052142Z duration 20 minutes

Boulder 060515Z Major magstorm begins 060322Z sudden commencement at 0322Z with 80 gamma deflection. Estimated K value of nine 0330-0435Z with apparent instrument saturation

Boulder 062030Z Soflare 1B S15W39 061906 max duration 60 minutes. Tenflare 303 FU 06/1905Z max duration 100 minutes

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10cm solar flux	A index	Active Regions: Location Lat-Long	Flares: Total	Flares: M	Flares: X	Outstanding events	Forecasts: Date	Forecasts: Location Lat-Long	Forecasts: Desc*	Alert Situations
183	02	01	187	104	09	S10E05	0	0	0	264 FU 10 cm Burst	02	S10E05	Q	SOLALERT 02/05
						S17E33	0	0	0	012155Z		S17E33	Q	MAGQUIET
						S13E25	16	3	0			S13E25	A	
						S09W21	9	0	0			S09W21	E	
						S21E21	0	0	0			S21E21	Q	
184	03	02	162	112	10	S11W10	0	0	0	10 cm Burst at	03	S11W10	Q	SOLALERT 03/05
						S17E18	0	0	0	020636Z 370 FU		S17E18	Q	MAGQUIET
						S13E10	20	5	1	022248Z 140 FU		S13E10	E	
						S10W35	0	0	0			S10W35	A	
185	04	03	145	117	07	S11W22	0	0	0	10 cm Burst	04	S11W22	Q	SOLALERT 04/05
						S17E05	0	0	0	110 FU 030335Z		S17E05	Q	MAGALERT 04/06
						S14W04	12	3	1	740 FU 030828Z		S14W04	E	
						S10W50	5	0	0	Proton Flare 030808Z Major Flare 030808Z		S10W50	A	
186	05	04	183	130	20	S12W31	0	0	0	10 cm Bursts	05	S12W31	Q	MAJOR FLARE ALERT 05/10 S14W16
						S17W08	0	0	0	1000 FU @ 0720Z		S17W08	Q	MAGALERT 05/07
						S14W16	18	2	4	1885 FU @ 1400Z		S14W16	P	
						S09W62	3	0	0	816 FU @ 1835Z		S13E13	Q	
						S13E13	0	0	0	330 FU @ 2106Z				
187	06	05	140	131	45	S10W75	2	0	0		06	S14W30	P	PROTON FLARE ALERT 06/08 S14W30
						S12W45	0	0	0	X2 200 FU 1506Z		S15W00	E	MAGALERT 06/08
						S14W30	12	3	2	X10 2600 FU 2118Z		Three		
						S10W22	0	0	0			Quiet		
						S15W00	2	0	0					
188	07	06	111	118	110	S10W88	3	0	0		07	S15W44	P	PROTON FLARE ALERT 07/08 S15W44
						S13W58	0	0	0	M6 240 FU 1038Z		Four		MAGALERT 07/10
						S15W44	22	1	2	X2 680 FU 1112Z		Quiet		
						S18W32	0	0	0	X2 314 FU 1915Z				
						S15W12	5	0	0					
189	08	07	109	111	116	S12W73	3	0	0		08	S12W57	MF	MAJOR FLARE ALERT 08/10
						S12W57	16	2	1	X1 180 FU 1011Z		Three		MAGALERT 08/10
						S17W45	0	0	0			Quiet		
						S12W26	0	0	0					
190	09	08	089	103	26	S12W86	0	0	0		09	S14W70	MF	MAJOR FLARE ALERT 09/10 S14W20
						S14W70	8	2	0	M9 2226Z		S08E78	E	MAGALERT MINOR 09/10
						S18W58	0	0	0			Four		
						S13W41	0	0	0			Quiet		
						N10W14	0	0	0					
						S08E78	1	0	0					
191	10	09	067	092	13	S16W83	9	2	1		10	S16W83	A	MAJOR FLARE ALERT S16W83 10/11
						S14W55	0	0	0			S14W55	Q	MAGALERT 10/11
						S10W42	0	0	0			S10W42	Q	
						S08E64	1	0	0			S08E64	Q	
192	11	10	052	085	22	S14W69	0	0	0		11	S14W69	Q	SOLNIL MAGALERT 11/11
						S08E47	2	0	0			S08E47	E	
						S08E54	2	0	0			S08E54	E	
193	12	11	030	080	13	S08E35	8	0	0		12	S08E35	Q	SOLQUIET MAGNIL
						S08E43	0	0	0			S08E43	Q	
194	13	12	035	081	15	S08E18	1	0	0		13	S08E18	Q	SOLQUIET MAGQUIET
						S08E26	0	0	0			S08E26	Q	
195	14	13	045	082	12	S08E07	0	0	0		14	S08E07	Q	SOLQUIET MAGQUIET
						S08E15	0	0	0			S08E15	Q	
						S08E43	0	0	0			S08E43	Q	
196	15	14	105	081	17	S08W05	0	0	0		15	S08W05	Q	SOLQUIET MAGQUIET
						S15E77	0	0	0			S15E77	Q	
						S08E02	0	0	0			S07E02	Q	
						S11E30	0	0	0			S11E30	Q	
						S13E07	0	0	0			S13E07	Q	
						S04E31	0	0	0			S04E31	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JULY 1974

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of obser-vation	Wolf number	10cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location Lat-Long	No. of Flares Total	M	X		Date	Location Lat-Long	Desc*	
197	16	15	144	083	09	S08W18	0	0	0		16	S08W18	Q	SOLQUIET
						S10W09	0	0	0			S10W09	Q	MAGQUIET
						S10E16	1	0	0			S10E16	Q	
						S11E65	0	0	0			S11E65	Q	
						S04E17	0	0	0			S04E17	Q	
						S17W62	0	0	0			S17W62	Q	
						S11W03	0	0	0			S11W03	Q	
198	17	16	087	088	11	S09W32	0	0	0		17	S09W32	Q	SOLQUIET
						S12E03	4	0	0			S12E03	Q	MAGQUIET
						S13E46	0	0	0			S13E46	Q	
						S04E02	0	0	0			S04E02	Q	
199	18	17	139	088	07	S08W46	1	0	0		18	S08W46	Q	SOLQUIET
						S10W36	0	0	0			S10W36	Q	MAGQUIET
						S11W09	1	0	0			S11W09	Q	
						S12E34	1	0	0			S12E34	Q	
						S03W11	0	0	0			S03W11	Q	
						S11W30	0	0	0			S11W30	Q	
						N06W11	0	0	0			N06W11	Q	
200	19	18	125	084	06	S08W58	0	0	0		19	S08W58	Q	SOLQUIET
						S11W22	4	0	0			S11W22	Q	MAGQUIET
						S12E22	0	0	0			S12E22	Q	
						S14W34	0	0	0			S14W34	Q	
						S06E16	0	0	0			S06E16	Q	
201	20	19	075	084	04	S08W73	0	0	0		20	S08W73	Q	SOLQUIET
						S10W35	2	0	0			S10W35	Q	MAGQUIET
						S12E07	0	0	0			S12E07	Q	
						S04E38	1	0	0			S04E38	Q	
202	21	20	082	084	08	S08W90	0	0	0		21	S08W90	Q	SOLQUIET
						S10W50	1	0	0			S10W50	Q	MAGQUIET
						S12W06	1	0	0			S12W06	Q	
						S04W53	0	0	0			S04W53	Q	
						S09E79	0	0	0			S09E79	Q	
203	22	21	092	087	10	S11W64	0	0	0		22	S11W64	Q	SOLQUIET
						S12W19	0	0	0			S12W19	Q	MAGALERT MINOR RECURRENCE 22/25
						S03W69	0	0	0			S03W69	Q	
						S09E70	0	0	0			S09E70	Q	
						S13E32	1	0	0			S13E32	Q	
						S08W17	0	0	0			S08W17	Q	
204	23	22	112	093	10	S11W81	0	0	0		23	S11W81	Q	SOLQUIET CAUTION S.E. LIMB
						S13W32	0	0	0			S13W32	Q	MAGALERT MINOR RECURRENCE 23/25
						S04W83	2	0	0			S04W83	Q	
						S09E54	0	0	0			S09E54	Q	
						S13E17	1	0	0			S13E17	Q	
205	24	23	099	095	74	S13W46	1	0	0	MAGSTORM BEGAN	24	S13W46	Q	SOLQUIET CAUTION EAST LIMB
						S09E40	1	0	0	23/0130Z		S09E40	Q	MAGALERT 24/25
						S14E04	1	0	0			S14E04	Q	
206	25	24	088	090	31	S13W59	0	0	0	MINOR MAGSTORM	25	S13W59	Q	SOLQUIET
						S09E26	1	0	0	CONTINUES		S09E26	Q	MAGALERT 25/27
						S14W09	5	0	0			S14W09	Q	
						S16E75	0	0	0			S16E75	Q	
207	26	25	097	087	20	S13W73	0	0	0	MINOR MAGSTORM	26	S13W73	Q	SOLQUIET
						S10E14	4	0	0	CONTINUES		S10E14	Q	MAGALERT 26/27
						S15W33	0	0	0			S15W33	Q	
						S16E60	0	0	0			S16E60	Q	
208	27	26	098	090	15	S13W86	0	0	0	MINOR MAGSTORM	27	S13W86	Q	SOLALERT 27/28
						S10E01	0	0	0	DECREASING		S10E01	Q	MAGALERT 27
						S16W35	1	0	0			S16W35	Q	
						S16E46	1	0	0			S16E46	Q	
						S10E33	3	1	0			S10E33	E	
209	28	27	080	085	24	S09W12	1	0	0	MINOR GEOMAGNETIC	28	S09W12	Q	SOLNIL
						S16W49	0	0	0	STORM CONTINUES		S16W49	Q	MAGALERT 28
						S16E32	0	0	0			S16E32	Q	
						S10E19	0	0	0			S10E19	Q	
210	29	28	093	082	20	S10W25	0	0	0	MINOR GEOMAGNETIC	29	S10W25	Q	SOLQUIET
						S16W65	0	0	0	STORM CONTINUES		S16W65	Q	MAGALERT MINOR 29
						S16E18	1	0	0			S16E18	Q	
						S18E07	0	0	0			S18E07	Q	
211	30	29	079	083	16	S09W40	0	0	0	MINOR GEOMAGNETIC	30	S09W40	Q	SOLQUIET
						S16W88	0	0	0	STORM ENDS		S16W88	Q	MAGNIL
						S15E02	1	0	0			S15E02	Q	
						S08W02	0	0	0			S08W02	Q	
212	31	30	063	083	12	S14W07	1	0	0		31	S14W07	Q	SOLQUIET
						S09W17	3	0	0			S09W17	Q	MAGQUIET
						S09W52	0	0	0			S09W52	Q	
213	01	31	065	085	06	S09W67	1	0	0		01	S09W67	Q	SOLQUIET
						S15W20	0	0	0			S15W20	Q	MAGQUIET
						S08W31	3	0	0			S08W31	Q	
						S02E17	0	0	0			S02E17	Q	

* Q=Quiet E=Eruptive A=Active P=Proton C=Caution D=Doubtful O.G.=Other Groups MF=Major Flare

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

	1973 FINAL					1974 PROVISIONAL						
DAY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
1	36	89	68	31	46	18	13	25	26	48	38	82
2	28	124	66	33	24	15	12	16	20	70	49	97
3	21	130	52	23	24	13	8	16	19	89	55	96
4	28	121	50	20	0	12	7	17	22	103	80	98
5	34	108	44	7	0	8	0	18	21	106	62	107
6	48	84	38	0	0	0	0	19	23	113	78	111
7	42	77	30	0	0	0	8	20	28	109	70	88
8	40	72	22	0	7	29	16	16	38	106	59	63
9	38	75	23	0	8	36	22	20	58	91	64	42
10	27	58	8	0	16	44	21	30	70	69	61	29
11	23	42	0	7	9	49	21	37	75	64	58	22
12	0	22	0	0	9	60	36	38	78	56	38	27
13	0	0	8	9	8	45	50	30	83	40	48	28
14	8	8	10	11	8	74	26	42	87	35	46	46
15	0	13	16	12	17	77	46	37	98	24	34	65
16	0	26	18	13	26	64	48	23	93	16	25	74
17	0	20	19	16	40	65	47	20	75	8	24	65
18	7	16	15	16	43	52	46	32	64	0	29	59
19	7	8	0	22	41	58	45	20	51	0	32	45
20	7	30	0	16	47	49	43	9	49	0	23	50
21	15	39	0	23	51	37	37	16	43	0	20	55
22	10	48	16	29	51	36	45	31	28	7	11	61
23	17	58	28	39	47	28	35	27	17	9	11	64
24	22	63	36	38	51	16	29	21	19	7	16	62
25	28	74	53	46	53	0	17	18	20	0	15	61
26	38	78	59	62	57	8	20	10	20	20	8	67
27	37	78	53	60	26	8	42	9	38	18	8	60
28	47	80	62	61	12	8	35	17	30	32	18	61
29	56	75	65	64	0	7		19	22	20	30	42
30	64	71	55	59	0	0		25	16	0	52	41
31	82		37		0	0		26		52		38
MEAN	25.6	59.3	30.7	23.9	23.3	29.3	27.7	22.7	44.4	42.3	38.7	61.5

1973 yearly mean = 38.0

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1973					1974						
DAY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
1	96.9	114.9	109.0	87.0	86.9	71.5	71.8	76.4	72.1	98.5	97.9	105.4*
2	96.8	129.2*	106.1	83.9	86.3	73.2	73.1	76.5	71.3	113.1	100.1	112.7*
3	95.0	136.5	103.5	81.1	82.7	73.3	73.1	77.1	71.6	115.5	98.9	118.5*
4	96.2	135.8*	94.9	77.4	78.6	72.5	72.9	79.0	73.3	118.0	98.2	127.8*
5	95.1	135.1*	90.6*	73.9	73.6	72.1	74.0	78.6	76.3	119.7	96.5	125.6*
6	88.8	130.9	85.9	73.2	70.9	74.7	75.4	77.5	80.0	123.0	95.0*	121.5
7	90.8	121.7*	82.2	72.1	70.4	76.0	77.4	76.0	80.2	119.3	92.8	118.9*
8	87.5	115.7	80.1	70.4	70.9	79.7	78.8	77.0	81.1	115.8	95.0*	104.7*
9	87.1	113.1*	79.1	70.4	71.2	84.9	80.8	80.2	87.8	110.0	95.1	95.5
10	83.4	106.7*	77.0	70.7	72.3*	89.2	80.5	86.1	93.5*	105.1	97.0	88.2
11	78.9	96.8	74.9	71.2	71.9	91.0*	77.5	85.9	99.8	104.3	95.3*	83.1
12	76.3	89.5	72.0	70.7	72.5	94.6	76.5	86.2	105.6*	97.1	91.7	83.3
13	74.7	84.6	70.5	72.6	73.1	94.8*	77.3	84.5	102.8	93.5	89.8	83.3
14	74.1	82.9	72.7	73.8	73.8	98.7	76.3	81.9	116.3	88.2	88.1	83.3
15	72.6	82.6	75.7	75.0	76.6	91.8	83.7	82.9	122.9*	84.9	84.7	85.5
16	74.1	83.9	75.6	75.6	79.7	90.0	84.7	81.8	115.0*	80.3	86.2	91.3
17	75.0	81.8	79.5	75.3	82.1	89.2	85.9	82.7	101.8	75.8	87.2	91.0
18	75.3	84.6	78.3	75.5	84.9	87.1	87.5	80.2	98.8	75.2	84.4	86.5
19	75.4	86.6	76.7	75.4	87.8	85.8	82.7	80.0	87.5*	73.0	82.8	87.1
20	76.8	92.0	73.4	76.8	89.9	84.4	82.2	79.6	82.3	72.5	83.8	86.7
21	80.4*	94.9	80.0	80.7	97.6	79.7	82.2	79.1	79.5	71.9	81.4	90.1
22	80.4	99.5	85.0	84.7	96.7*	83.5*	82.2	80.0	75.3	72.2	82.3	95.3*
23	81.8	103.9	89.9	86.5	96.0	81.0	84.2	79.8	73.9	71.5	80.2	98.5
24	85.3	106.2	97.6*	87.0	98.1	77.8	80.9	76.6	75.0	72.4	79.1	92.1*
25	88.9	112.7	101.0	88.0*	97.6	74.1	78.6	74.3	76.5	72.4	78.8	89.5
26	91.2	115.5	101.0	91.8*	92.9	71.5	76.2	72.6	74.9	79.6	79.6	93.1
27	95.1	115.9	101.7*	88.8	88.6	70.7	76.4	71.8	75.3	85.1	82.4	87.9
28	97.5	118.1	100.7	90.7	81.7*	70.8	75.8	70.4	77.9	87.4	83.0	84.5
29	100.8	116.5	99.1	94.9	76.4	70.7		71.5	81.6	89.4	89.4*	85.2
30	101.3	116.5*	97.4*	95.7*	74.1	70.8		72.1	91.7	91.3	93.1*	85.9
31	109.6		90.5		72.0	71.3		72.9		95.1		87.4
MEAN	94.9	106.8	87.1	79.7	81.5	80.4	78.9	78.4	86.7	92.6	89.0	95.5

* adjusted for burst

DAILY SOLA

JULY

JUL 1974	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX		
			R_Z	$R_{A'}$	OTTAWA 2800	AFCRL 15400	AFCRL 8800
1	182	7	82	77	101.9*	538	303
2	183	8	97	84	109.0*	546	316
3	184	9	96	87	114.6*	549	314
4	185	10	98	88	123.6*		
5	186	11	107	94	121.5*	548	330
6	187	12	111	83	117.5	523	309
7	188	13	88	71	107.3*	531	300
8	189	14	63	50	101.3*	527	294
9	190	15	42	33	92.4	520	285
10	191	16	29	16	85.3	511	278
11	192	17	22	14	80.4	510	278
12	193	18	27	21	80.6	514	273
13	194	19	28	23	80.6	510	272
14	195	20	46	36	80.6	516	279
15	196	21	65	43	82.8	516	282
16	197	22	74	53	88.4	518	287
17	198	23	65	44	88.1	508	288
18	199	24	59	48	83.7	516	281
19	200	25	45	44	84.3	506	281
20	201	26	50	44	83.9	513	279
21	202	27	55	50	87.3	516	289
22	203	1	61	47	92.3*	527	288
23	204	2	64	45	95.4	526	290
24	205	3	62	54	89.2*	507	285
25	206	4	61	54	86.7		279
26	207	5	67	55	90.2	506	281
27	208	6	60	45	85.3	520	278
28	209	7	61	42	82.0	510	269
29	210	8	42	36	82.6	523	273
30	211	9	41	37	83.3	524	273
31	212	10	38	33	84.9	518	279
MEAN			61.5	50.0	92.5	521	287

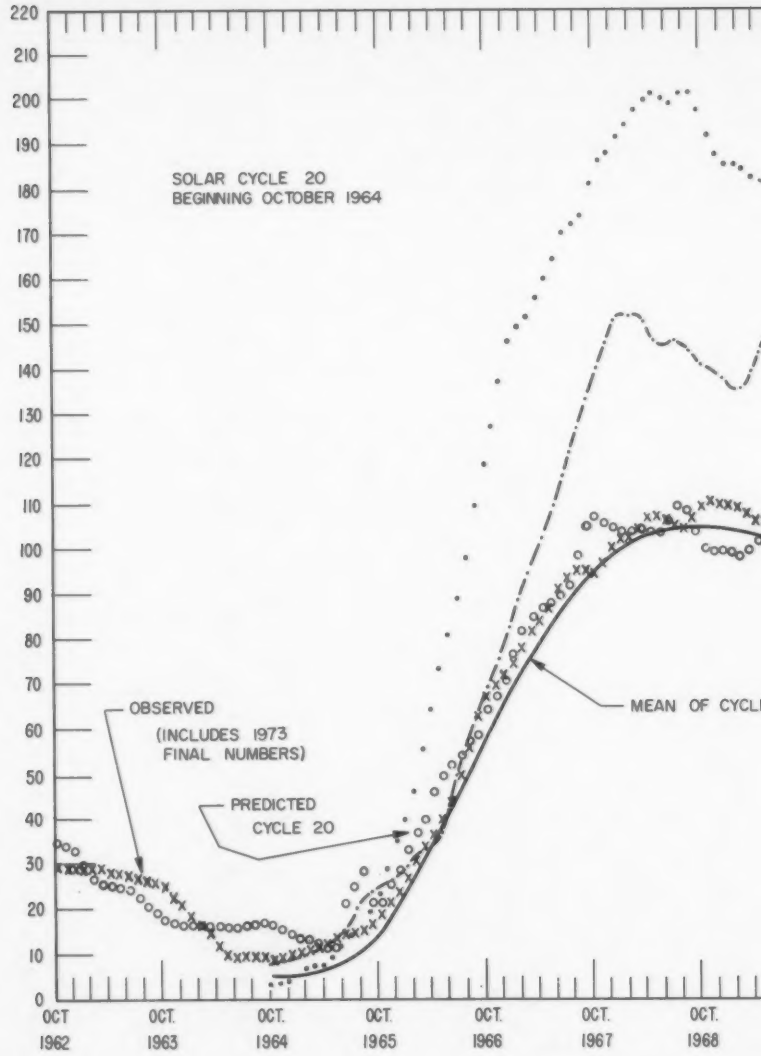
* Corrected for burst.

LAR INDICES

LY 1974

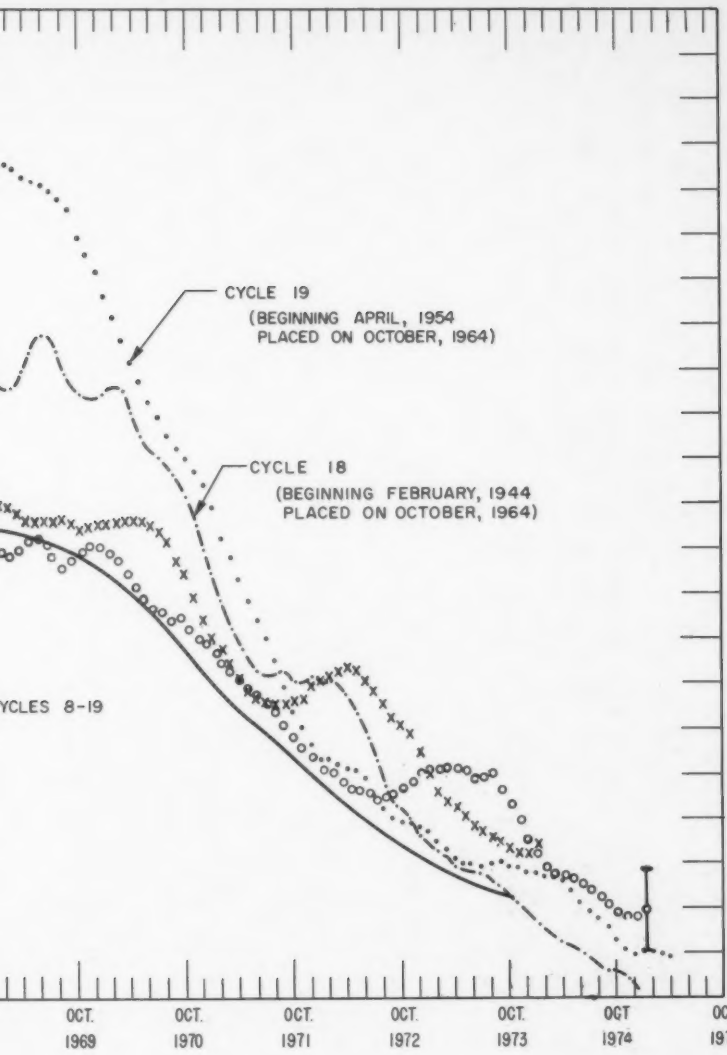
SOLAR FLUX ADJUSTED TO 1 A.U.							
RL 00	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606	AFCRL 410	AFCRL 245
3	158	105.4*	102.6	63.7	47.8	33.2	31.7
6	167	112.7*	109.6	65.5	47.9	56.3	
4	171	118.5*	114.1	67.3	48.2	33.1	30.5
		127.8*					
0	181	125.6*	122.9	72.9	47.2	26.3	12.2
9	166	121.5	116.6	70.5	45.2	25.2	10.5
0	154	110.9*	109.0	65.2	45.5	25.5	12.1
4	147	104.7*	99.0	60.9	41.5	24.2	12.0
5	137	95.5	89.8	56.3	39.6	24.8	13.3
8	130	88.2	83.4	55.0	39.0	23.2	10.0
8	125	83.1	80.0	52.1	37.6	22.2	11.1
3	124	83.3	80.0	51.2	39.5	23.2	11.2
2	124	83.3	79.0	52.9	40.2	23.6	10.9
9	125	83.3	79.3	51.3	41.2	37.0	23.9
2	126	85.5	81.8	54.1	39.6	23.3	13.1
7	132	91.3	88.8	58.1	46.4	28.4	27.4
8	130	91.0	87.8	57.0	40.8	23.3	10.0
1	124	86.5	82.0	57.8	40.0	22.9	11.3
1	129	87.1	83.6	58.3	40.8	23.6	11.8
9	124	86.7	83.7	57.1	40.2	23.8	9.4
9	130	90.1	86.1	57.0	40.2	22.9	9.2
8	137	95.3*	91.9	57.7	41.8	24.7	11.8
0	136	98.5	93.6	60.9	41.4	24.9	11.6
5	130	92.1*	89.5	57.2	40.4	24.8	11.1
9	127	89.5	85.9	58.4	42.6	25.6	11.3
1	129	93.1	89.4	62.3	44.6	27.7	11.5
8	124	87.9	85.0	62.1	42.6	23.9	14.5
9	123	84.5	81.5	56.7	40.7	28.1	21.6
3	121	85.2	80.5	59.0	44.2	22.9	9.8
3	125	85.9	80.9	58.7	42.9	21.9	9.5
9	129	87.4	83.3	54.4	42.6	22.5	10.2
7	136	95.5	90.7	59.1	42.4	26.4	13.9

7
Jul 74



PREDICTED AND OBSERV

8
Jul 74



RVED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS

CYCLE 20

MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1964										9.6	10.2	11.3
1965	11.7	12.0	12.5	13.6	14.6	15.8	15.5	16.4	17.4	19.7	22.3	24.5
1966	27.7	31.3	34.5	37.4	40.7	44.6	50.3	56.6	63.1	67.6	70.2	72.7
1967	75.0	78.8	82.2	84.6	87.4	91.3	94.1	95.3	95.3	95.8	97.1	100.6
1968	102.6	102.9	104.7	107.2	107.6	106.6	105.2	104.8	107.0	109.9	110.6	110.1
1969	110.0	109.6	108.0	106.4	106.2	106.1	105.8	106.4	105.4	104.1	104.6	104.9
1970	105.6	106.0	106.2	106.1	105.8	105.3	103.8	101.0	97.2	93.9	89.4	84.1
1971	80.4	77.8	74.4	70.9	68.1	66.7	65.4	64.6	65.8	66.2	66.8	69.4
1972	70.8	71.2	72.4	73.4	72.9	70.5	68.2	65.5	62.2	60.6	58.7	55.1
1973	50.9	46.5	44.2	42.7	40.7	39.1	37.6	36.3	34.7	33.2	32.7	32.6
1974	34.2	33.1 (2)	32.2 (3)	31.6 (3)	31.2 (4)	30.2 (5)	28.8 (6)	27.0 (6)	25.1 (7)	23.4 (8)	21.9 (9)	20.7 (9)
1975	19.7 (9)	18.5 (9)	17.6 (9)	16.8 (9)	15.8 (9)	15.0 (10)	14.5 (11)					

For each month, the upper figure is the observed or predicted Zürich smoothed sunspot number. The lower figure in parenthesis is the corresponding absolute value of the 90% prediction interval, an indication of the uncertainty above and below the predicted number. Observed numbers are those with no prediction intervals. The observed smoothed sunspot numbers are based on final Zürich numbers through 1973.

The predicted sunspot numbers are derived from a regression analysis based on cycles 8 through 19. Tests indicate that earlier cycles are from a different statistical population. From July 1968 - February 1970 a regression analysis based on cycles 1 through 19 was used because it had not then been proven that two populations exist.

SOLAR FLARES

PARTIAL LISTING

Solar Flares for which at least one observatory has assigned a numerical importance of "1" or greater.

JULY 1974

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE JULY	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
MANI	01	0037E	0050	0038	S14	E34	.611	13043	3.6	13D	1N	2		0038	1.86	2.32			F
CATA	01	1035	1045	1035	S13	E28	.530		3.5	10	1B	3		1035	1.73	2.05		(355)	
MONT	01	1035	1046	1036	S12	E28	.523	13043	3.5	11	1N		C	1036	2.58				
MCMA	01	1036E	1048D		S15	E29	.556	13043	3.6	12D	SB		C	1036	.72	.90			BE
MONT	01	1556	1623	1600	S13	E24	.479	13043	3.5	27	1N		C	1600	2.58				
MCMA	01	1556	1625	1559	S12	E24	.471	13043	3.5	29	SB		C	1559	1.44	1.50			EL
BOUL	01	1557	1610	1558	S12	E24	.471		3.5	13	SB		V	1558		1.80			
MONT	01	1724	1740D	1735	S14	E30	.562		4.0	16D	SN		C	1735	.52				E
PALE	01	1725E	1851D	1725U	S14	E30	.562		4.0	86D	SN	2	C		.55				U
BOUL	01	1802	1900D	1828	S14	E33	.599		4.2	58D	SN		C	1828	1.71	2.05			
MCMA	01	1829E	1915D		S15	E33	.605	13043	4.2	46D	1N		C	1829	1.65	2.10			F
ATHN	02	0612E		0614D	S14	E23	.476												
ATHN	02		0620D	0620D					4.0	8D	SN	4	V		.83				DE
MANI	02	0625E	0630D	0625U	S15	E24	.497		4.1	5D	SN	1		0625	1.03	1.18			F
MONT	02	0629E	0803	0646	S15	E24	.497	13043	4.1	94D	1N		C	0646	2.58				
CATA	02	0630E	0700D	0655	S16	E23	.494		4.0	30D	1B	3		0655	2.90	3.33		(417)	
MONT	02	0656	0716	0704	S12	E17	.384		3.6	20	SN		C	0704	1.13				E
ARCE	02	0703E	0741		S13	E30	.556		4.5	38D	1B		C	0703	3.41	4.10			BT
MANI	02	0719E	0750D	0719U	S14	E23	.476		4.0	31D	SB	1		0719	1.24	1.38			UZ
MANI	02			0730			.476							0730	2.17	2.42			
MANI	02	0809E	0910D	0818	S16	E21	.471	13043	3.9	61D	1F	2		0818	2.06	2.30			F
MANI	02			0836										0836	.31	.35			
MANI	02			0855										0855	.83	.92			
MANI	02			0906										0906	1.13	1.27			
MONT	02	0827	0842	0832									C	0832	.21				D
ARCE	02	0901E	1010		S13	E19	.418		3.8	69D	SN		P	0901	1.07	1.20			
MONT	02	0943	1010	0946	S16	E20	.460	13043	3.9	27	1N		C	0946	3.40				
CATA	02	0945	1005	0945	S17	E20	.471		3.9	20	1B	3		0945	4.05	4.59		(295)	
RAMY	02	1922E	2103D	1942	S15	E11	.358		3.6	101D	SF	3	V		1.32				F
BOUL	02	1923	1951	1936	S19	E11	.414		3.6	28	SN		C	1936	1.61	1.64			
MCMA	02	1943E	2057D		S16	E10	.365	13043	3.6	74D	1N		P	1943	1.91	2.10			BE
BOUL	02	2252	2357	2314	S15	E15	.396	13043	4.1	65	1F		C	2314	2.14	2.22			
MANI	02	2315E	2356	2315U	S16	E12	.381		3.9	41D	1N	2		2315	2.06	2.20			FZ
MANI	03	0205	0255	0208	S15	E08	.338		3.7	5D	1B	2		0208	2.06	2.18			FU
MANI	03			0216				13043						0216	4.13	4.36			
TEHR	03	0210E	0248D	0212U	S15	E04	.317		3.4	38D	SN	2	C		.91				F
TEHR	03	0258E	0345D	0319	S17	E07	.362	13043	3.6	47D	2B	2	C		7.02				F
MANI	03	0300	0425D	0305	S15	E08	.338		3.7	85D	1B	2		0305	2.58	2.73			UZ
MANI	03			0353										0353	1.34	1.42			
MANI	03	0300	0425D	0316	S15	E08	.338		3.7	85D	2B			0316	6.19	6.54			
ATHN	03	0338E	0353	0338U	S15	E04	.317		3.5	15D	SN	2	C		.66				DE
ATHN	03	0348	0400	0352	S12	E11	.319		4.0	12	SF	2	C		.33				DE
ATHN	03	0758	0911	0800	S15	E07	.331		3.9	73	SN	3	V		.66				DE
ATHN	03			0809							SN				1.16				DE
ATHN	03			0837				13043			1B				2.31				DE
MONT	03	0759	0940	0836	S15	E08	.338	13043	3.9	101	1B		C	0836	5.16				
UPIC	03	0800	0805D	0803U	S16	E08	.353		3.9	5D	SN			0803	1.05				
ARCE	03	0802E	0918		S15	E08	.338		3.9	76D	3N		C	0840	17.68	18.00			KF
CATA	03	0805	0937	0832	S15	E09	.344		4.0	92	2B	3		0832	5.21	5.55		(457)	
TEHR	03	0808E	0923D	0815	S13	E08	.308		3.9	75D	SB	4	V		.83				Z U
TEHR	03			0838				13043			1B				2.63				Z U
WEND	03	0822E	0934	0836	S13	E12	.342		4.2	72D	2B		P	0836	11.34				
HERS	03	0905E	0925	0905	S15	E07	.331		3.9	20D	SB		S	0906	1.63	1.70	1.40		BE
BOUL	03	1452	1509	1500	S 9	W45	.725	13030	30.2	17	1N		C	1500	1.93	2.74			
MCMA	03	1453	1505	1456	S09	W46	.736	13030	30.2	12	SN		C	1456	1.03	1.50			E
MONT	03	1454	1503	1456	S09	W46	.736		30.2	9	SN		C	1456	1.86				H
ATHN	04	0610	0720D	0615	S12	W04	.270		4.0	70D	SN	3	C		.50				F
ATHN	04			0658				13043			1B				2.48				F
MONT	04	0634E	0848	0759	S15	W04	.319	13043	4.0	134D	1B		C	0759	2.58				H
CATA	04	0652	0800	0652	S15	W06	.328		3.8	68	1B	3		0652	4.05	4.29		(513)	
ARCE	04	0704E	0852		S15	W06	.328		3.8	108D	1N		C	0706	2.66	2.70			
ATHN	04	0729E	0749	0734	S15	W04	.319		4.0	20D	SN	3	V		1.26				F
ATHN	04	1312E	1442	1314	S17	W06	.359		4.1	90D	SN	3	V		.50				DE
ATHN	04			1323											.50				DE
MCMA	04	1321E	1535	1328	S16	W07	.348	13043	4.0	134D	2B		C	1328	1.03	1.10			XZ
MCMA	04			1356										1356	5.16	5.40			V
CATA	04	1330	1505	1410	S16	W08	.354		4.0	95	1B	3		1410	4.63	4.96		(324)	
BOUL	04	1339	1430	1357	S17	W 8	.369	13043	4.0	51	2B		C	1357	8.57	8.64			
MONT	04	1347	1448	1357	S15	W08	.339	13043	4.0	61	2B		C	1357	9.90				H
RAMY	04	1348	1438D	1358	S16	W08	.354	13043	4.0	50D	1B	4	C		4.18				U F
UPIC	04	1433	1456		S16	W09	.361		3.9	23	SN			1436	.85				BF
MCMA	04	1816E	1836D		S17	W12	.397	13043	3.9	20D	1B		P	1836	1.86	2.00			E
BOUL	04	1818	1905	1828	S17	W 9	.375	13043	4.1	47	1N		C	1828	4.18	4.23			
PALE	04	1823E	1855	1829U	S17	W09	.375	13043	4.1	32D	1B	2	V		2.58				UDE
BOUL	04	2014	2044	2019	S17	W13	.405		3.9	30	SF		C	2019	.96	.99			
BOUL	04	2031	2300	2105	S17	W12	.397	13043	4.0	149	2N		C	2105	5.14	5.25			
PALE	04	2039E	2125	2100U	S14	W12	.357	13043	4.0	46D	1B	2	C		3.25				U F

SOLAR FLARES

PARTIAL LISTING

Solar Flares for which at least one observatory has assigned a numerical importance of "1" or greater.

JULY 1974

OBSERVATORY	DATE JULY	OBSERVED UT START	OBSERVED UT END	OBSERVED UT MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION CENTRAL DISTANCE	LOCATION MCMATH PLAGE REGION	LOCATION CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME UT	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hg	MEASUREMENTS MAX. INT. %	REMARKS
ATHN	05	0659	0718D	0703	S15	W21	.465		3.7	19D	SN	3	C		.66				DE
TEHR	05	0701	0712	0705	S15	W22	.476		3.6	11	SF	2	C		.19				F
MONT	05	0701	0719	0703	S17	W26	.540		3.3	18	SN		C	0703	.62				E
WEND	05	0701E	0730		S13	W23	.470	13043	3.6	29D	1N		V		3.09				
ARCE	05	0710E	0751D		S14	W23	.479		3.6	41D	SF		C	0710	.76	.80			
WEND	05	1220E	1306		S13	W21	.445		3.9	46D	1N		P		4.13				
BOUL	05	1226	1305	1233	S14	W21	.455		3.9	39	SN		C	1233	.86	.92			
MCMA	05	1228E	1310	1237	S16	W23	.497	13043	3.8	42D	SN		C	1237	.83	.90			E
ATHN	05	1229E	1302	1234	S14	W22	.467		3.9	33D	SN	3	V		.99				DE
HERS	05	1239E	1306	1239	S14	W21	.455		4.0	27D	SB		P	1240	1.04	1.20			E
BOUL	05	1338	1430	1410	N 8	E70	.938	13050	10.8	52	1F		C	1410	.86	2.31			
MONT	05	1403	1407	1405	N08	E71	.944		10.9	4	SF		C	1405	.41				
WEND	05	1353	1447		S14	W22	.467		3.9	54	1N		V		5.16				
BOUL	05	1400	1433D	1410	S16	W22	.486		3.9	33D	SF		C	1410	1.71	1.85			
RAMY	05	1407	1412	1407U	S12	W28	.526		3.5	5	SF	4	C		.23				DE
MCMA	05	1410E	1505D		S16	W23	.497	13043	3.9	55D	SN		C	1425	.52	.60			EH
ATHN	05	1415E	1434	1417	S14	W23	.479		3.9	19D	SF	3	V		.83				F
MCMA	05	1507E	1642D	1517	S16	W23	.497	13043	3.9	95D	2B		C	1517	5.67	6.50			EF
RAMY	05	1507	1511D	1511D	S16	W23	.497	13043	3.9	4D	1B	4	V		2.15				U F
WEND	05	1507E	1626	1520	S17	W22	.496		4.0	79D	2B		P	1520	10.31				
MONT	05	1508	1615D	1511	S15	W24	.500	13043	3.8	67D	1B		C	1511	3.09				W
ATHN	05	1510E	1558	1515	S14	W23	.479	13043	3.9	48D	1B	3	V		2.15				Z H
CATA	05	1510	1605D	1517	S16	W24	.509		3.8	55D	2B	3		1517	5.80	6.73		(501)	
BOUL	05	1506	1605	1513	S14	E18	.420		7.0	59	1B		V	1513		3.60			
BOUL	05	2118	2345	2142	S17	W26	.540	13043	3.9	147	2B		C	2152	5.89	6.56			
RAMY	05	2120E	2220D	2144	S14	W27	.528	13043	3.9	60D	1B	3	V		3.09				U F
MCMA	05	2123	2326D	2142	S16	W26	.532	13043	3.9	123D	2B		C	2142	8.77	10.80			FIXV
PALE	05	2132	2256	2142	S14	W26	.516	13043	3.9	84	1B	2	C		3.97				U F
BOUL	05	2248	2313	2256	S 9	W73	.960	13030	30.5	25	1F		C	2256	.86	2.47			
PALE	05	2249E	2309D	2256	S10	W74	.965		30.4	20D	SN	2	V		.83				DE
TEHR	06	1053E	1150D	1110U	S15	W35	.633	13043	3.8	57D	1B	3	V		1.86				DE Z
MONT	06	1056E	1233	1113	S15	W35	.633	13043	3.8	97D	1N		C	1113	2.58				
ATHN	06	1057	1221	1058	S18	W34	.639		3.9	84	SF	4	V		.66				F
ATHN	06			1113				13043			1B				2.15				F
MONT	06	1106	1114	1108	S17	W32	.610		4.1	8	SN		C	1108	.72				
RAMY	06	1110E	1112D	1112D	S16	W35	.638	13043	3.8	2D	1B	2	V		1.98				F U
CATA	06	1110	1230	1130	S15	W35	.633		3.8	80	2B	3		1130	4.63	5.98		(372)	
MONT	06	1120	1127	1122	S14	W47	.763		2.9	7	SF		C	1122	.62				
MONT	06	1120	1221	1134	S21	W35	.670		3.8	61	SN		C	1134	.72				
BOUL	06	1812	2020	1906	S16	W37	.661	13043	4.0	128	1B		C	1906	3.75	4.70			
PALE	06	1817	1829	1823U	S14	W40	.686		3.8	12	SF	2	C		.45				DE
MCMA	06	1830E	2010D	1845	S18	W40	.705	13043	3.8	100D	2B		C	1845	2.06	2.80			EH
MCMA	06			1906										1906	3.61	5.00			FKLIV
TEHR	07	0916	1255D	1010	S16	W45	.750	13043	4.0	219D	1B	3	C		1.83				DE
CATA	07	0920	1115	1015	S16	W47	.770		3.9	115	1B	3		1015	2.31	3.63		(398)	
RAMY	07	1017E	1104	1022	S16	W45	.750		4.1	47D	SB	3	C		1.67				DE
MCMA	07	1038E	1120		S18	W49	.797	13043	3.8	42D	SB		C	1044	.77	1.20			D
RAMY	07	1136	1145	1143	S17	W47	.774		4.0	9	SF	3	C		.37				F
MCMA	07	1150	1355	1224	S18	W49	.797	13043	3.8	125	1N		C	1224	2.58	4.20			E
RAMY	07	1212	1344	1221	S17	W48	.784	13043	3.9	92	1N	3	C		2.17				UDE
BOUL	07	1220	1250	1223	S16	W50	.800		3.8	30	1N		V	1223		3.36			
MCMA	07	1820	1900D	1830	S17	W57	.865	13043	3.5	40D	1N		C	1830	1.03	2.00			E
RAMY	07	1825	1840D	1829	S14	W52	.814		3.9	15D	SN	3	V		1.03				F
PALE	07	1827E	1846	1830U	S15	W54	.835		3.7	19D	SN	2	V		1.13				F
BOUL	07	1827	1847	1831	S14	W54	.832		3.7	20	1N		V	1831		2.80			
PALE	07	1834E	1841	1834U	S14	W49	.784		4.1	7D	SN	2	V		.21				DE
PALE	07	1853E	1906D	1855U	S17	W51	.813		4.0	13D	SF	2	V		.93				F
TEHR	08	1227	1343	1233	S15	W58	.869		4.2	76	SN	4	C		.91				F
TEHR	08			1315											.72				F
MCMA	08	1229	1246	1230	S17	W62	.903	13043	3.9	17	SN		C	1230	.52	1.30			E
UPIC	08	1229	1244	1231	S16	W63	.908		3.8	15	1B			1231	1.47				
BOUL	08	1230E	1247E	1233	S19	W61	.899		3.9	17D	SN		V	1233		2.00			
ATHN	08	1230E	1239	1232	S16	W60	.887		4.0	9D	SN	3	V		.99				F
RAMY	08	1230	1247	1235	S17	W63	.910		3.8	17	SN	2	C		.46				DE
MCMA	08	1540	1620D	1541	S17	W63	.910	13043	3.9	40D	1B		C	1541	.83	2.10			EV
RAMY	08	1540	1601	1545	S16	W65	.922		3.8	21	SB	2	C		.74				DE
MITK	09	0521E	0525D		S15	W68	.939	13043	4.1	4D	1N		P	0521	1.03				D
BOUL	09	1348	1409	1358	S16	W72	.960	13043	4.2	21	1B		C	1358	.86	2.40			
MCMA	09	1356	1402	1358	S17	W76	.977	13043	3.9	6	1N		C	1358	.52	2.20			E
ATHN	09	1357E	1405	1359	S17	W71	.956	13043	4.3	8D	1B	3	V		1.16				F
RAMY	09	1400E	1408D	1401U	S17	W76	.977		3.9	8D	SN	3	V		.46				DE
RAMY	09	1730	1740D	1732	S14	W78	.983		3.9	10D	SB	3	V		.37				DE
BOUL	09	1731	1740	1734	S14	W77	.979		4.0	9	SN		C	1734	.64	2.03			
MCMA	09	1733E	1740		S17	W81	.991	13043	3.7	7D	1B		C	1734					
PALE	09	1733E	1742	1733U	S16	W77	.980		4.0	9D	SB	3	V		.52				DE

SOLAR FLARES

PARTIAL LISTING

Solar Flares for which at least one observatory has assigned a numerical importance of "1" or greater.

JULY 1974

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE JULY	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
MANI	10	0553E	0623D	0558	S18	W90	1.000	13043	3.5	30D	1N	2		0558	.72	2.35			F
ATHN	10	0556	0618	0603	S17	W88	1.000		3.6	22	SB	3	C		.66				F
MONT	10	0606E	0615	0609	S18	W85	.998		3.9	9D	SN		C	0609	.41				D
CATA	14	0935	1008	0940	S12	E90	1.000	13067	21.1	25	2N	3		0940	.58			(158)	
BUCA	26	0640	0730		S13	E50	.798		30.0	50	1F		C	0652	2.21	3.60			
MITK	26	0640	0731	0652	S12	E50	.795		30.0	51	1N		C	0652	2.37	3.90			ES
ATHN	26	0644	0726	0655	S16	E49	.798	13095	30.0	42	1F	3	C		1.82				F S
TEHR	26	0650	0732	0659	S13	E53	.826		30.3	42	SN	4	V		.83				Z F
TEHR	26			0704											1.80				Z F
CATA	26	0650	0810	0650	S14	E38	.674	13095	29.1	80	1B	3		0650	2.90	3.92		(240)	
MONT	26	0659E	0729	0710	S11	E49	.782		30.0	30D	1N		C	0710	2.58				
PALE	26	2228E	22420	2235U	S11	E34	.610		29.5	14D	SN	2	C		.81				F
MANI	26	2228E	2243	2230	S11	E36	.634	13095	29.6	15D	1B	1		2230	1.65	2.13			H
TEHR	30	0803	08470	0835	S12	W11	.354		29.5	44D	SN	3	C		.36				F
ARCE	30	0812E	08500		S08	W11	.301		29.5	38D	1N		C	0837	2.28	2.40			
MONT	30	0819	0907	0827	S10	W11	.327		29.5	48	SN		C	0827	1.13				
CATA	30	0820	0900	0840	S10	W11	.327		29.5	40	SN	3		0840	1.16	1.22		(182)	
WEND	30	0821E	0853		S10	W11	.327	13095	29.5	32D	1F		V		4.13				
BOUL	31	1640	1710	1649	S10	W27	.517	13095	29.7	22	1F		C	1649	3.21	3.61			
HCMA	31	1648E	16510		S10	W28	.530		29.6	3D	SF		P	1649	.21	.20			D
BOUL	31	1917E	20350	1925	S11	W64	.912	13084	27.0	78D	2F		C	1925	3.21	7.26			
PALE	31	1922E	19290	1925U	S10	W65	.918		26.9	7D	SF	2	V		.31				H

Note: Catania and Capri-S express Maximum Intensities in percent of the local undisturbed chromosphere instead of percent of the local continuum. Parentheses are used to indicate this difference.

"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by a high speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H and K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked assymetry in Hα line suggests ejection of high velocity material.
S = Brightness follows disappearance of filament (same position).
T = Region active all day.
U = Two bright branches, parallel (||) or converging (Y).
V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

SOLAR FLARES

Date, time (UT) and coordinates of Subflares not included in preceding table.

JULY 1974

01 0301 S17 E30	01 0303E S17 E30	01 0400 S10 W10	01 0455E S11 W10	01 0456 S09 W09	01 0530E S11 W10
01 0600 S09 W09	01 0603E S11 W10	01 0604 S10 W10	01 0639 S11 W09	01 0639 S11 W09	01 0654 S11 W09
01 0734 S11 W09	01 0741 S13 E36	01 0806E S11 W11	01 0807 S11 W09	01 0809 S10 W12	01 0850E S10 W11
01 0850 S11 W11	01 0850 S13 E36	01 0852 S11 W10	01 0852E S10 W11	01 0856 S11 W11	01 1035E S13 W27
01 1052 S13 E35	01 1114E S13 E35	01 1154 S13 E35	01 1155 S17 E32	01 1209 S08 W16	01 1256 S13 E34
01 1257 S15 E34	01 1404 S13 E31	01 1544 S16 E30	01 1605E S15 E30	01 1605 S14 E30	01 1646E S15 E31
01 1956E S16 E29	01 2220E S13 E30	01 2220E S13 E30	01 2333E	01 2333E S15 E28	01 2335 S15 E26
02 0000E S15 E28	02 0000E S15 E28	02 0000E S15 E28	02 0000E S15 E28	02 0000E S15 E28	02 0109 S13 E19
02 0113 S12 E14	02 0147 S14 E21	02 0232E S15 E24	02 0250 S13 E29	02 0337E S15 E24	02 0411 S03 W75
02 0412 S12 E18	02 0543E S15 E22	02 0543E S15 E22	02 0600E S17 F20	02 0610E S17 E22	02 0730 S11 W27
02 0747E S16 E22	02 0747E S11 W28	02 0836E S11 W29	02 1014 S14 E20	02 1016E S13 E19	02 1016 S14 E20
02 1034 S13 E24	02 1103 S15 E20	02 1345 S18 E14	02 1400E S13 E19	02 1610E S14 E21	02 1610 S13 E21
02 1621 S13 E11	02 1627E S13 E11	02 1628 S13 E10	02 1628 S13 E10	02 1628 S09 E08	02 1628 S09 E08
02 2305E S13 E30	02 2352 S15 E24	02 2352 S15 E24	03 0131 S11 W38	03 0149 S12 W37	03 0300 S10 W39
03 0416 S12 E11	03 0420E S17 E07	03 0649 S17 E12	03 0725 S17 E12	03 0740 S10 E01	03 0942 S15 E08
03 0943E S14 E09	03 0945 S16 E10	03 1111 S10 W37	03 1219 S13 E 3	03 1221 S12 E04	03 1227E S13 E04
03 1253 S15 E08	03 1308 S08 W41	03 1359 S11 W03	03 1401 S10 W02	03 1401 S11 W02	03 1417 S19 E01
03 1418 S14 E 8	03 1721 S13 W 3	03 1740 S 5 W51	03 1811 S14 E06	03 1811 S10 W47	03 1812 S13 E 6
03 1814 N10 W45	03 2019 S13 E 3	03 2026 S14 E04	03 2147 S10 W49	03 2152E S10 W50	03 2208 S11 W 7
03 2244E S11 W48	03 2324 S17 W 2	04 0004 S12 W 7	04 0015 S13 E 3	04 0024E S14 E02	04 0101 S14 W 0
04 0225E S09 W51	04 0235E S09 W50	04 0255E S10 W52	04 0306 S14 W03	04 0310E S16 W05	04 0334 S09 W54
04 0337E S10 W52	04 0345E S14 W01	04 0759 S10 W54	04 0806 S15 W09	04 1105 S15 W07	04 1105 S15 W07
04 1112E S15 W05	04 1133E S16 W06	04 1511 S15 W09	04 1637 S15 W 7	04 1641 S17 W08	04 1641E S15 W09
04 1642 S16 W09	04 1704 S17 W 9	04 1725 S13 W08	04 1726 S14 W 7	04 1728E S15 W10	04 2221 S14 W11
04 2312 S14 W13	04 2313 S14 W13	05 0031 S11 W23	05 0032 S11 W25	05 0040 S16 W14	05 0048 S15 W13
05 0048E S16 W15	05 0059 S15 W14	05 0148E S14 W16	05 0148 S13 W13	05 0220E S16 W15	05 0221E S15 W14
05 0256E S16 W17	05 0736 S16 W18	05 0740 S17 W18	05 0856 S16 W18	05 0858 S15 W16	05 0859 S17 W22
05 0859 S17 W22	05 0931 S16 W18	05 1016 S16 W18	05 1035 S10 W69	05 1157 S15 W21	05 1157 S16 W21
05 1157E S15 W18	05 1158 S14 W21	05 1158 S14 W21	05 1200 S15 W22	05 1200E S17 W21	05 1203 S13 W19
05 1315 N 9 E69	05 1323 S17 W29	05 1325 S15 W26	05 1632 S10 W71	05 1636 S08 W74	05 1756 S14 W22
05 1923 S27 W24	05 2016 S14 W25	05 2028 S15 E03	05 2036 S17 W27	05 2332 S 9 W75	06 0029E S14 W26
06 0035 S16 W39	06 0040E S15 E02	06 0147E S08 W75	06 0203E S14 W00	06 0225E S14 W00	06 0303E S10 W76
06 0314E S18 W78	06 0422E S17 W27	06 0454 S17 W30	06 0537 S14 W01	06 0549E S17 W32	06 0623E S14 W29
06 0628E S16 W26	06 0646 S16 W32	06 0647E S17 W32	06 0652E S17 W27	06 0658E S14 W29	06 0659 S16 W26
06 0700 S15 W29	06 0736 S16 W42	06 0738 S16 W26	06 0738 S16 W26	06 0739 S15 W39	06 0759 S15 W29
06 0802E S13 W29	06 0815 S16 W26	06 0815 S15 W30	06 0859E S14 W29	06 0912E S14 W36	06 0918E S17 W33
06 0955 S15 W30	06 1008E S14 W30	06 1036 S17 W30	06 1037E S13 W30	06 1037E S14 W32	06 1141 S10 W86
06 1302 S15 W33	06 1335 S14 W32	06 1347E S13 W36	06 1348 S15 W32	06 1350 S13 W33	06 1437 S14 W34
06 1443 S15 W34	06 1529E S14 W34	06 1534 S16 W33	06 1641 S14 W34	06 1708 S14 W35	06 1717 S16 W34
06 1820 S16 W35	06 1833 S12 W51	06 1840E S15 W39	06 1907 S15 W45	06 1940E S15 W40	06 1953E S15 W43
06 2016E S15 W39	06 2052 S13 W44	06 2104E S13 W39	06 2252E S15 W42	06 2300E S15 W41	07 0211E S15 W43
07 0310E S11 W44	07 0310E S15 W43	07 0419 S17 W48	07 0419 S17 W43	07 0608 S09 W63	07 0704 S13 W57
07 0725 S16 W46	07 0916 S16 W45	07 1512 S17 W54	07 1653E S15 W50	07 1655E S15 W50	07 1720E S14 W51
07 1931E S14 W50	07 2126E S16 W55	08 0525E S16 W62	08 0535E S13 W60	08 0634E S15 W64	08 0800 S16 W56
08 0951 S16 W57	08 0959 S15 W61	08 1005E S15 W64	08 1030 S17 W64	08 1250E S 7 E90	08 1305 S14 W61
08 1308 S15 W63	08 1338 S22 W64	08 1435 S 9 E89	08 1435 S15 W61	08 1435 S09 E86	08 1440 S07 E90
08 1452 S17 W63	08 1454 S13 W66	08 1720 S 9 E89	08 1822 S14 W61	08 1824 S17 W61	08 1855 S14 W61
08 1948U S15 W62	08 2223 S15 W67	09 0149E S15 W69	09 0357E S15 W72	09 0539E S07 E78	09 0540 S09 E77
09 0640E S15 W77	09 0710 S15 W75	09 0713 S14 W71	09 0713 S14 W71	09 0825 S16 W72	09 0832 S16 E90
09 0859 S16 W73	09 0916 S15 W76	09 1033E S15 W77	09 1104E S15 W75	09 1140E S17 W75	09 1223E S15 W76
09 1443 S14 W74	09 1448 S17 W78	09 1521 S17 W79	09 1630 S15 W77	09 1747 S17 W80	09 1810 S15 W81
09 1833 S 9 E73	09 1853 S15 W77	09 1853 S15 W78	09 1853 S14 W79	09 1854 S17 W82	09 2053 S16 W90
09 2237E S09 E70	09 2336E S15 W85	10 0702 S09 E62	10 0744 S11 E87	10 1017 S18 W87	10 1322 S17 W90
10 1403E S13 E55	10 1404 S09 E59	10 1405 S09 E60	10 1514 S17 W90	10 1515 S17 W90	10 1608 S10 E57
10 1610E S13 E54	10 1628 S 6 E50	10 1855 S05 E54	11 0306E S13 W67	11 0404 S14 W75	11 0406 S12 W72
11 0426E S01 E17	11 0731 S19 W90	12 0943 S08 E34	12 0944E S10 E33	12 1126 S13 E66	12 1128 S13 E67
12 1333 S13 E67	12 1335 S15 E66	12 1336 S09 E62	12 1336 S13 E65	15 1050 S14 E73	15 1153 S08 W10
15 1226 S13 E25	15 2053E S13 E20	16 0544 S10 E13	16 0545E S12 E14	16 0610E S12 E15	16 0751 S14 E16
16 0752 S12 E15	16 0753 S12 E16	16 0757E S12 E15	16 0800 S12 E15	16 0837 S12 E16	16 0838 S12 E12
16 0905 S11 E14	16 1405E S12 E40	17 0257E S05 W33	17 0436 S11 E03	17 0437E S11 E01	17 0949 S04 W86
17 1257 S04 W88	17 1324 S15 E38	17 1324 S18 E38	17 1333 S15 E39	17 1333 S21 E37	17 1443 S14 W81
17 1705 S13 W81	17 1711E S12 W83	18 1150 S11 W14	18 1447 S11 W15	18 1448 S12 W14	18 1448 S11 W16
18 1448 S11 W15	18 1842 S11 W16	18 2012 S10 W19	18 2019E S12 W17	18 2026 S11 W21	19 0000E S12 W18
19 0301 S12 W20	19 0301 S12 W20	19 0441E S05 W25	19 1401 S10 W31	19 2010 N06 E73	20 0226E S10 W38
20 0748E N05 E64	20 0805 S12 E02	20 0816E S11 E02	20 1600 S07 W47	20 1600 S06 W46	20 1620E S07 W46
20 1932 S04 W50	21 0935E S10 W58	21 1215 S03 W60	21 2243E S13 E32	22 1056 S13 E24	22 1441 S14 E23
22 1444 S13 E26	22 1615E S13 W75	22 2142 S03 W78	22 2202 S01 W80	23 0033 S11 W31	23 0550 S17 W32
23 0810 S13 E14	23 1031 S03 W87	23 1224 S03 W88	23 1446E S14 E10	23 1829E S08 E43	23 1830E S08 E46
23 1831E S 7 E44	23 2230E S15 E 2	23 2230 S14 E05	23 2247E S16 E06	23 2317 S14 E05	23 2317 S14 E05
23 2318E S16 E06	23 2335E S17 E43	24 0002 S15 E04	24 0005 S15 E05	24 0019 S20 E47	24 0109 S15 E05

SOLAR FLARES

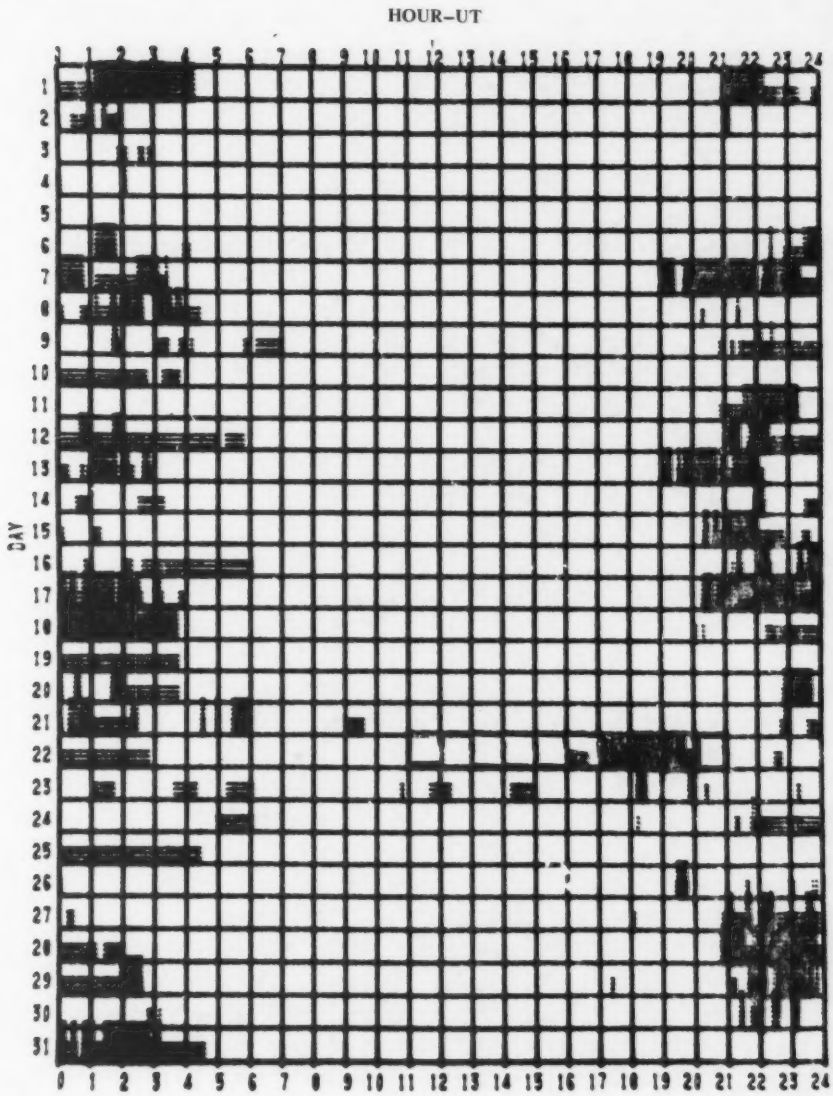
JULY 1974

24 0142	S14 E03	24 0143E	S16 E05	24 0146	S13 E42	24 0454E	S16 E02	24 0743	S07 E37	24 0757	S07 E37
24 0927	N12 E32	24 1201E	S01 E18	24 2255E	S13 W10	25 0506	S07 E22	25 0827	S12 E24	25 1532	S11 E21
25 1757	S18 E61	25 1757	S13 E22	25 2059	S09 E11	25 2059	S 8 E13	25 2303	S17 W29	26 0128E	S17 E20
26 0810E	S16 E60	26 1058	S09 E40	26 1225	S19 W36	26 1403	S11 E40	26 1425	S12 E39	26 1435E	S10 E39
26 1536	S29 E37	26 2122	S18 W41	26 2125E	S18 W34	26 2125E	S18 W41	27 0713	S23 E88	27 1953E	S09 W06
27 1954	S09 W08	28 1301	S13 W16	28 1707	S12 E26	28 1708	S13 E28	28 1709	S13 E26	28 2053E	S16 E65
29 0605E	S09 E06	29 0649E	S09 E06	29 1949E	S18 E10	29 1955	S10 E10	29 2225	S10 W04	30 0125	S10 W43
30 0903	S10 W09	30 1825E	S10 W16	30 1841E	S12 W17	30 1844E	S15 W17	30 1845	S12 W17	30 1932	S09 W16
30 2045	S15 W03	30 2046E	S14 W02	31 0640E	S10 W20	31 0730	S09 W21	31 0734	S11 W21	31 0735E	S11 W21
31 0735	S07 W23	31 0915	S09 W21	31 0919	S09 W24	31 0920E	S09 W25	31 0920	S08 W26	31 1310U	S10 W24

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JULY 1974



Observatories included in total patrol:

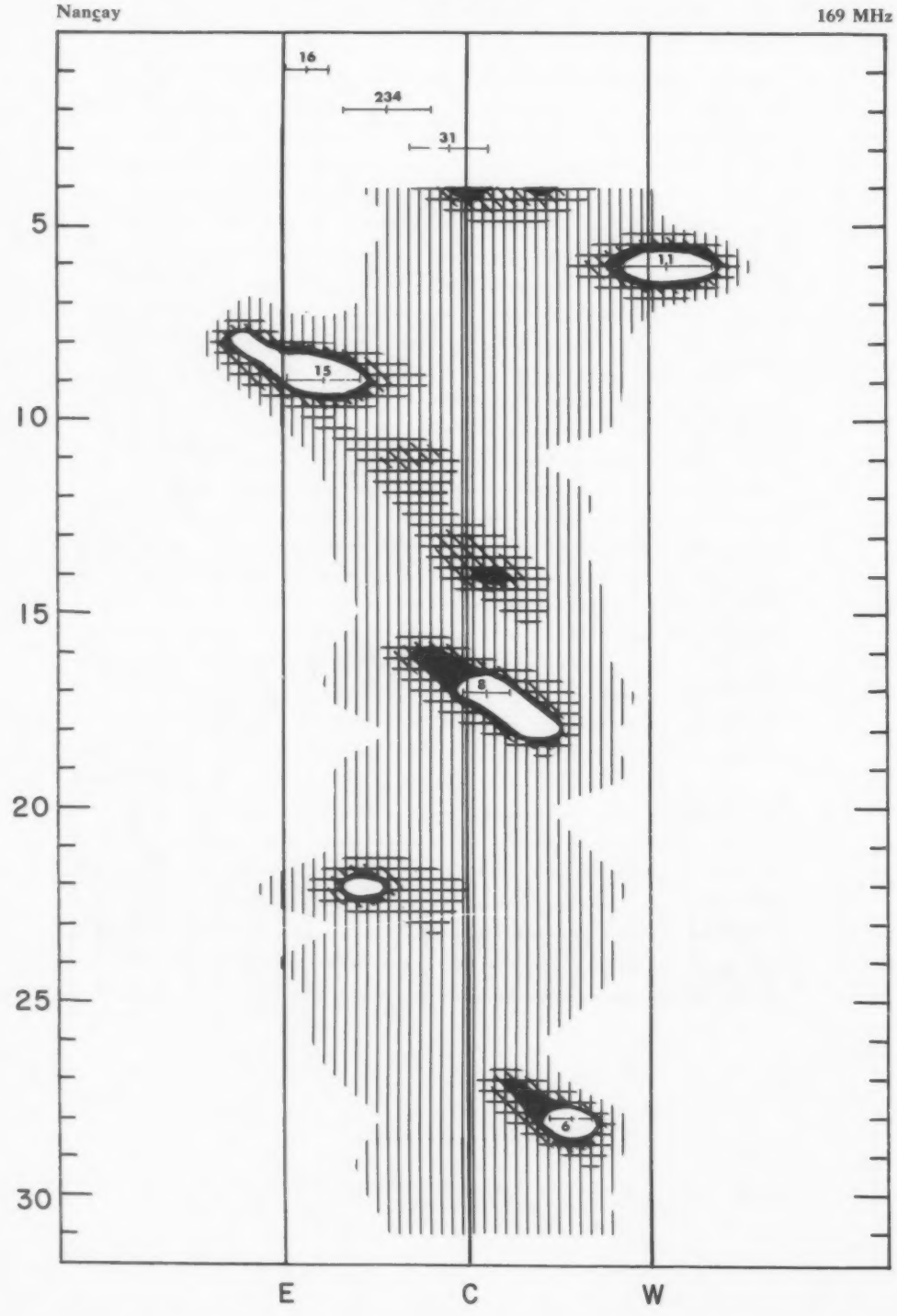
Arcetri	Bucharest	Manila	Monte Mario	Tehran
Athenes	Catania	McMath-Hulbert	Palehua	Upice
Boulder	Herstmonceux	Mitaka	Ramey	Wendelstein

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

16
Jul 74

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

JULY 1974

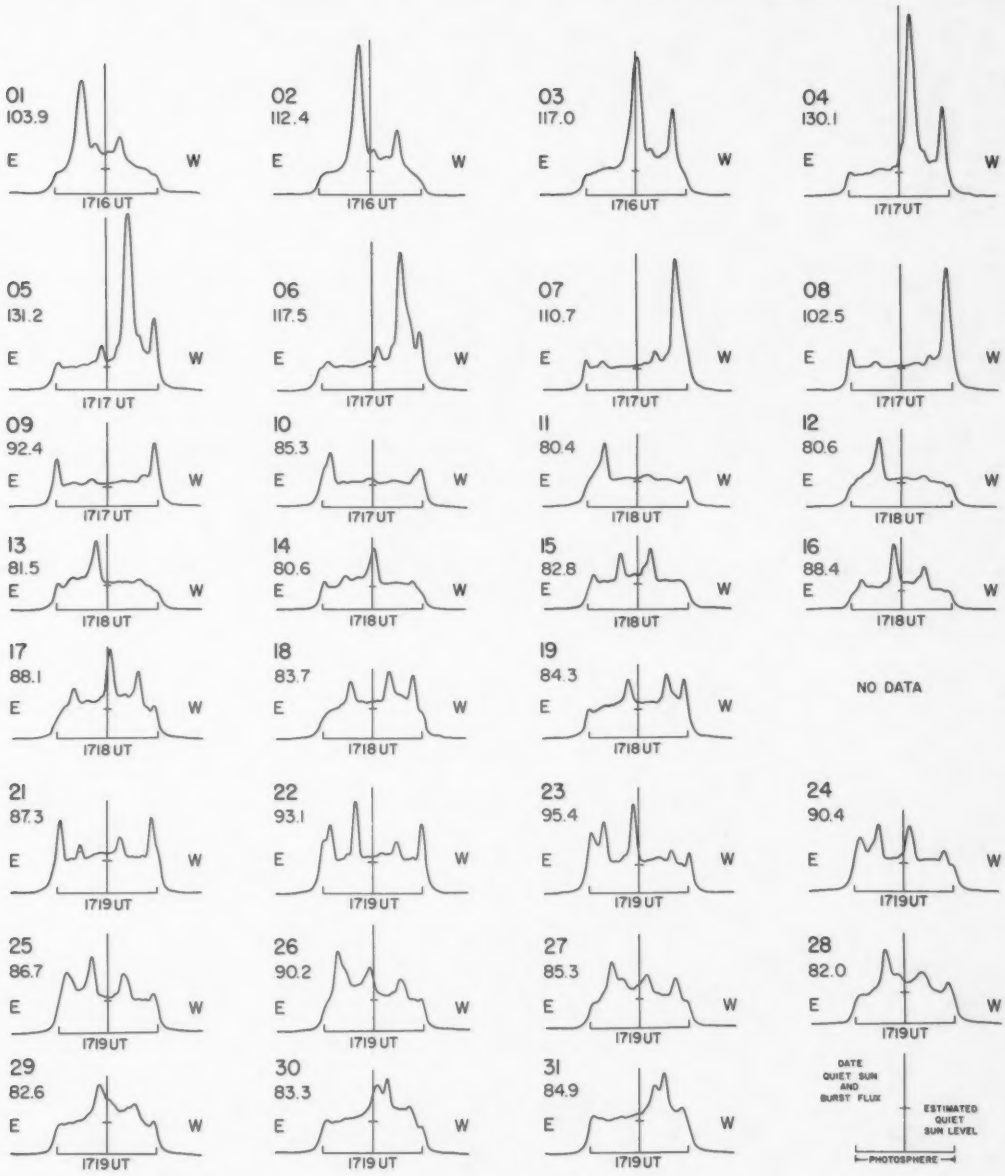


EAST - WEST SOLAR SCANS

July 1974

ALGONQUIN RADIO OBSERVATORY
CANADA

10.7 cm
Fan Beam with 1.5 minutes of arc
E - W Resolution



18
Jul 74

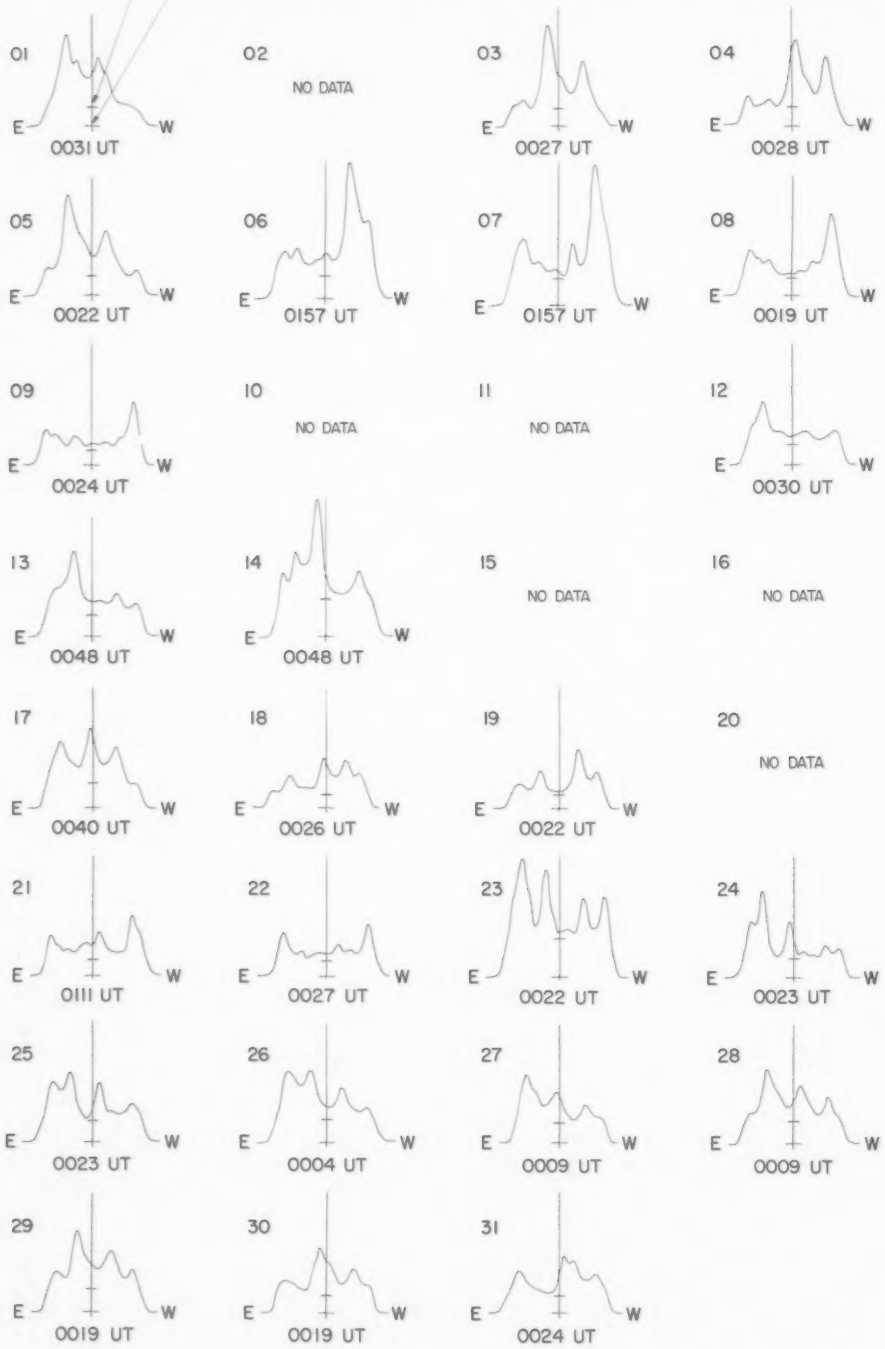
EAST-WEST SOLAR SCANS

JULY 1974

Fleurs, Australia

ESTIMATED QUIET SUN LEVEL
COLD SKY LEVEL

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



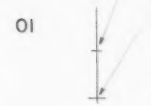
EAST-WEST SOLAR SCANS

JULY 1974

Fleurs, Australia

ESTIMATED QUIET SUN LEVEL
COLD SKY LEVEL

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



01

02

03

04

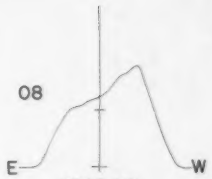
NO DATA 1-7, 10, 11, 14-16 JULY

05

06

07

08



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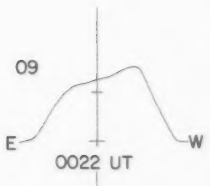

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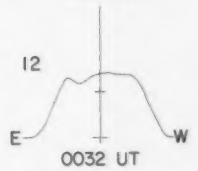
12



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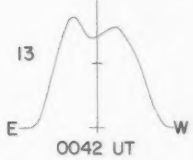

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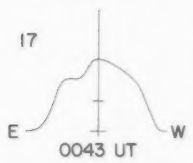
17



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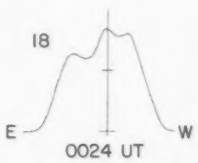

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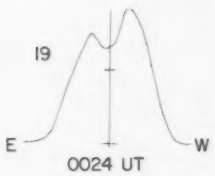

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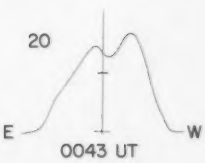

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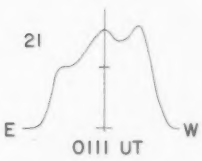

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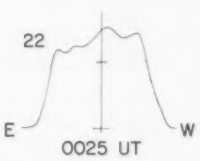

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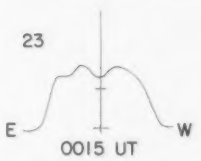

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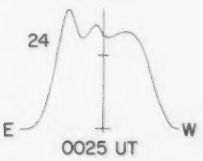

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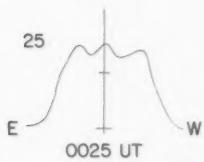

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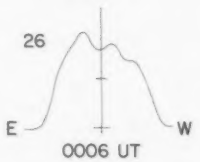

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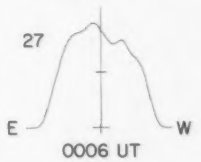

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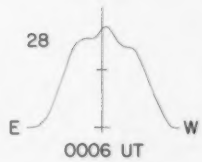

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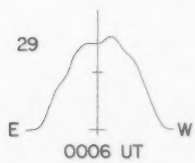

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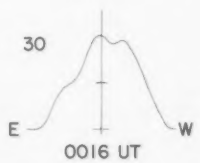

31

NO DATA

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
JULY 1974

JUL 1974	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
1	2695	MANI	4	0001.5	0010.9	19.5	48.7	13.1		
	8800	SGMR	4	1033.3	1035.6	7.2	65.1	19.5		
	2695	SGMR	4	1034.2	1035.8	4.1	67.6	20.3		
	2800	OTTA	27	1155		195	1.6	1.5		
	2800	OTTA	24	1155	1210	15	1.6	0.8		
	2800	OTTA	24	1210		155	1.6			
	2800	OTTA	20	1257	1323	53	4.2	2.1		
	8800	SGMR	20	1304	1305.2	11	7.1	2.2		
	2800	OTTA	20	1400	1405	20	2.6	1.3		
	8800	SGMR	20	1401.3	1407	21.7	11.8	3.5		
	2695	SGMR	20	1400.8	1403.4	28.1	3.5	1.0		
	2695	BOUL	21	1401.5	1404.5	18	5.0	2.0		
	2800	OTTA	26	1445	1510	25	-1.6	-0.8		
	8800	SGMR	46	1555.1	1556.9	7.3	42.0	26.6		
	8800	SGMR	46		1558.3		88.6			
	2695	SGMR	46	1554.8	1556.3	6.7	12.2	10.4		
	2695	SGMR	46		1557.4		34.8			
	2800	OTTA	23	1556	1622	240	6.6	3.0		
	2800	OTTA	45	1556	1558.4	4.5	34.0	14.0		
	2695	BOUL	45	1556.5	1559	5.5	34.0	13.0		
	2800	OTTA	8	1617.7	1617.7		2.6			
	2800	OTTA	8	1714.6	1714.6		2.0			
	2800	OTTA	1	1722.5	1723.3	2.5	3.6	1.2		
	8800	SGMR	22	1722.5	1829.2	113.2	28.7	17.2		
	2695	SGMR	22	1722.8	1723.5	114.7	7.5	4.5		
	2695	BOUL	8	1723	1724.5	5.5	6.0	2.0		
	2800	OTTA	20	1820	1828	70	5.2	2.4		
	2695	BOUL	21	1821	1829.5	36.5	5.0	2.0		
	2800	OTTA	21	2030	2120	165	6.4	3.4		
	2695	BOUL	3	2130	2131	2.5	4.0	1.0		
	2695	BOUL	45	2136.5	2155.5	35	135.0	40.0		
	8800	MANI	40	2141.2U	2154.2U	39.3U	230.0U	///.		SUNRISE
	2695	MANI	40	2141 U	2153.8U	39.5U	178.0U	///.		SUNRISE
	8800	SGMR	46	2144.8	2151.1	18.5	149.2	48.1		
	8800	SGMR	46		2154.3		240.7			
	2800	OTTA	4	2145.5	2154.5	16.5	198.0	61.0		
	2695	SGMR	46	2145.6	2151.1	20.7	87.9	39.0		
	2695	SGMR	46		2154.3		195.0			
	2800	OTTA	29	2202	2202	18	6.2	3.0		
	8800	SGMR	29	2203.3	2203.3	13.7	9.4	2.8		
	2695	BOUL	8	2236	2236.5	1	26.0	11.0		
	2695	BOUL	8	2303	2303.5	1	12.0	5.0		
	2695	PENT	23	2325	2420	140	14.0	6.0		
	2695	MANI	22	2334.2	2344.2	15.8	13.9	4.4		
	2695	BOUL	8	2340	2340.5	1	4.0	1.0		
	2695	BOUL	3	2344	2345	1.5	4.0	1.0		
	2695	PENT	4	2409	2411	8	48.0	12.0		
2	2695	BOUL	45	0008.5	0012	11	38.0	17.0		
	2695	PENT	2	0115	0116.5	6	4.6	2.3		
	2695	MANI	2	0115.3	0116.6	2.5	4.4	.9		
	2695	BOUL	3	0116.5	0118.5	3	6.0	2.0		
	2695	MANI	2	0418.1	0418.5	1.2	4.4	.9		
	8800	MANI	3	0454.5	0455.2	4.1	27.8	7.0		
	2695	MANI	1	0534.2	0534.6	.6	2.6	.9		
	8800	MANI	41	0601.8	0603	26.2	113.0	26.1		
	2695	MANI	41	0601.8	0609.6	25.7	17.6	7.0		
	8800	MANI	47	0636.6	0715.3	67.9	1060.0	250.0		
	2695	MANI	46	0636	0715.1	71.4	360.0	106.0		
	8800	MANI	4	0819.4	0821.9	4.1	50.0	14.3		
	2695	MANI	2	0819.5	0820.2	3.8	10.4	2.8		
	2800	OTTA	22	1225	1343	135	4.6	2.3		
	8800	SGMR	4	1627.8	1638.8	30.2	64.0	19.2		
	2800	OTTA	21	1627	1650	115	5.2	3.0		
	2695	SGMR	4	1627.5	1639	18.6	26.7	4.6		
	2695	BOUL	45	1633.5	1640	12	20.0	6.0		
	2800	OTTA	4	1636	1639	10	21.0	5.2		
	8800	SGMR	22	1700	1714.8	43.2	15.2	9.1		
	2695	SGMR	22	1705.4	1718	39.1	2.5	1.5		
	8800	SGMR	3	1846.2	1846.4	1.8	17.6	5.3		
	2800	OTTA	28	1850	1925	35	1.8	0.9		
	8800	SGMR	23	1927.2	1934.5	115.8	17.6	10.6		
	2800	OTTA	27	1925		305	9.2			
	2800	OTTA	24	1925	1935	10	9.2	4.6		
	2695	SGMR	23	1925.6	1943.8	110.1	8.4	5.0		
	2800	OTTA	24	1935		272	9.2			
	2800	OTTA	2	2042	2044	3	2.0	1.0		
	2695	BOUL	45	2043.5	2045	2.5	4.0	1.0		
	8800	SGMR	1	2052.5	2053.1	1.9	7.6	1.0		
	2695	SGMR	1	2052.5	2052.9	1.1	4.8	1.4		
	2800	OTTA	1	2052.2	2052.9	1	4.6	2.3		
	2695	BOUL	8	2052.5	2053.5	2	7.0	3.0		
	8800	SGMR	3	2200.9	2206	8.8	10.0	3.0		
	2800	OTTA	3	2202.5	2206	13	13.2	6.0		
	2695	BOUL	3	2203.5	2207	13.5	16.0	6.0		
	2695	SGMR	3	2203.6	2204.7	7.4	10.6	3.2		
	2695	PENT	21	2245		70	7.4	3.7		
	2695	BOUL	45	2246.5	2307	50	52.0	17.0		
	8800	MANI	4	2246.7	2311.4	40	205.0	27.4		
	2695	MANI	40	2248.5	2305.8	45	86.0	19.4		

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JUL 1974	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	2695 PENT	40	2251	2306	39	74.0			
	8800 SGMR	46	2302	2306.4	20.5	51.7	28.4		
	8800 SGMR	46		2311.4		140.3			
	2695 SGMR	46	2302.1	2305.8	18.5	60.3	12.1		
	2695 SGMR	46		2311.7		49.5			
3	2695 PENT	8	0002.9	0003	.5	6.6	3.3		
	2695 BOUL	8	0003	0004	2.5	7.0	3.0		
	2800 OTTA	26	0007	0030		-9.2			
	2695 PENT	8	0057.5	0057.5		7.8			
	2695 BOUL	45	0058	0058.5	3	7.0	3.0		
	2695 PENT	8	0058.7	0058.7		9.8			
	2695 PENT	24	0110	0140	30	5.6	2.8		
	2695 PENT	24	0140		10 D	5.6			
	8800 MANI	4	0202	0209.3	13.4	73.0	18.3		
	2695 MANI	4	0206.4	0209.6	8.5	18.0	8.0		
	8800 MANI	46	0311.3	0318.4	13.9	170.0	45.7		
	2695 MANI	46	0311.3	0318.4	12.2	90.0	20.0		
	8800 MANI	4	0416.1	0416.7	4.9	23.8	5.5		
	2695 MANI	2	0551.2	0551.9	5	4.0	1.0		
	2695 MANI	2	0723.6	0724.5	1.8	8.0	2.0		
	8800 MANI	4	0807.7	0808	2.8	11.0	3.7		
	2695 MANI	4	0807.8	0808.1	1.3	14.0	5.0		
	8800 MANI	47	0829.8	0836.3	42.1	3900.0	430.0		
	2695 MANI	47	0828.3	0836.3	39.5	810.0	174.0		
	2695 PENT	20	1045	1100	70	3.6	1.8		
	2695 SGMR	2	1148.5	1148.7	.8	3.0	.9		
	2800 OTTA	20	1219	1221	15	2.4	1.2		
	2695 SGMR	23	1239	1255.3	45.8	6.3	1.9		
	2800 OTTA	21	1242	1255	73	6.6	3.3		
	2800 OTTA	40	1244	1246.5	11	15.0			
	8800 SGMR	20	1244.8	1256.8	22	4.6	2.3		
	2695 SGMR	46	1246.2	1246.3	1.4	15.6	4.7		
	2695 SGMR	46		1247.4		15.0			
	2695 BOUL	45	1247	1248.5	2	15.0	6.0		
	2695 BOUL	45	1256	1258	2.5	6.0	2.0		
	2695 BOUL	3	1302.5	1304	3.5	5.0	2.0		
	2800 OTTA	21	1410	1521	175	9.4	4.7		
	2800 OTTA	1	1425.5	1426	1	2.6	1.3		
	2695 SGMR	1	1425.6	1426	.9	1.5	.3		
	2800 OTTA	46	1512	1515.5	9	65.0	16.2		
	2695 BOUL	45	1513	1517.5	9	49.0	17.0		
	8800 SGMR	46	1513.5	1514.4	11.8	13.4	4.5		
	8800 SGMR	46		1515.6		15.1			
	2695 SGMR	46	1512.2	1514.3	8.6	51.0	23.6		
	2695 SGMR	46		1515.5		78.6			
	2695 SGMR	29	1520.8	1520.8	47.9	4.2	1.3		
	2800 OTTA	20	1720	1730	30	2.4	1.2		
	2695 BOUL	45	1734.5	1738	7	44.0	15.0		
	8800 SGMR	22	1804.2	1825.2	74	15.6	9.3		
	2695 SGMR	22	1804.7	1825.2	73.4	15.9	9.5		
	2800 OTTA	21	1805	1848	90	4.6	2.3		
	2800 OTTA	1	1810	1813	6	5.0	2.5		
	2695 BOUL	3	1812	1813.5	3.5	6.0	2.0		
	2800 OTTA	45	1823	1825	10	12.6	3.2		
	2695 BOUL	45	1823.5	1826	7	13.0	3.0		
	2800 OTTA	40	1836	1841	17	7.6			
	2695 BOUL	8	1840.5	1842	3.5	9.0	4.0		
	2800 OTTA	21	2015	2050	90	4.8	2.4		
	2800 OTTA	2	2039.5	2040	2	9.8	4.8		
	2695 BOUL	8	2041	2041.5	2	9.0	3.0		
4	2695 PENT	8	0019.1	0019.1		5.8			
	2695 PENT	21	0052	0105	38	6.2	3.1		
	8800 MANI	4	0056.2	0056.9	19.8	41.6	5.4		
	2695 MANI	4	0056.2U	0056.9U	17.1U	31.7U	2.9U		RFI
	2695 PENT	40	0056	0057	16	29.0			
	2695 BOUL	40	0056.5	0058	17.5	29.0	6.0		
	8800 MANI	3	0611.5	0612.2	3.5	15.0	3.7		
	2695 MANI	1	0611.5	0612.2	3.5	1.9	1.0		
	8800 MANI	47	0642.9	0648.3	19.8U	2600.0	550.0U		
	2695 MANI	47	0641.1	0648.3	22.2U	840.0	260.0U		
	8800 SGMR	4	1103.9	1104.2	9.2	12.6	3.8		
	2695 SGMR	4	1103.8	1104.5	10.7	17.4	5.2		
	2800 OTTA	4	1104	1104.5	1.5	18.0	9.0		
	2800 OTTA	41	1217.5	1218	2	24.0			
	2800 OTTA	8	1217.5	1217.5		20.0			
	2800 OTTA	8	1218	1218		24.0			
	2800 OTTA	8	1219	1219		16.0			
	8800 SGMR	28	1317.1	1351.7	34.6	37.8	18.9		
	2695 SGMR	28	1319.1	1352.6	33.5	2.7	1.4		
	2800 OTTA	24	1345	1349	4	3.6	1.8		
	2800 OTTA	24	1349		720 D	3.6			
	8800 SGMR	47	1351.7	1354.3	28.3	4886.0	1954.0		
	8800 SGMR	47		1406		986.0			
	2695 SGMR	47	1352.1	1354.3	63.4	1686.0	674.0		
	2695 SGMR	47		1414.7		846.0			
	2800 OTTA	47	1352.5	1354	67.5	1370.0	514.0		
	2695 BOUL	47	1353	1355.5	119	847.0	122.0		
	8800 SGMR	29	1420	1420	48.6	100.8	40.3		

SOLAR RADIO EMISSION
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JUL 1974	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	2695	SGMR	29	1456	1456	56.1	26.4	10.6		
	2800	OTTA	30	1500	1500	50	15.0	6.0		
	2800	OTTA	1	1520	1522	9	2.4	1.2		
	2800	OTTA	23	1619	1730	230	14.0	4.6		
	2800	OTTA	8	1620	1620.2	.5	4.0	2.0		
	2695	SGMR	23	1637.8	1733.8	85.2	46.8	23.4		
	8800	SGMR	22	1641.5	1733.9	65.7	43.7	21.8		
	2695	SGMR	41	1643.6	1722.1	74.8	176.4	52.9		
	2695	PENT	45	1643.5	1645	3.5	6.4	2.1		
	2800	OTTA	40	1703	1712.1	11	36.0			
	2695	BOUL	45	1703	1713	15.5	31.0	9.0		
	2695	BOUL	45	1717.5	1718	7	87.0	10.0		
	2800	OTTA	4	1718	1720	6	32.0	16.0		
	2695	BOUL	3	1728	1735	12	13.0	5.0		
	2800	OTTA	4	1731.5	1734	5.5	33.0	13.0		
	2800	OTTA	41	1752	1755	8	51.0			
	2695	BOUL	45	1752.5	1757	12.5	28.0	10.0		
	8800	SGMR	46	1817.8	1821.2	24.2	430.0	129.0		
	8800	SGMR	46		1826.7		167.6			
	2695	SGMR	47	1819.3	1821.3	20.7	517.0	173.0		
	2695	SGMR	47		1824.3		577.0			
	2800	OTTA	47	1819.2	1823.1	16.8	706.0	120.0		
	2695	BOUL	45	1820	1825.5	63.5	407.0	78.0		
	2800	OTTA	30	1836	1836	45	12.4	6.2		
	8800	SGMR	3	1845.8	1847.2	21.5	350.0	105.0		
	2695	SGMR	46	1845.6	1848.2	15.6	267.0	80.1		
	2695	SGMR	46		1850.3		174.3			
	2800	OTTA	46	1846	1848.2	16	220.0	44.0		
	2695	BOUL	45	1949.5	1950.5	7	5.0	2.0		
	2695	SGMR	1	2003.4	2003.7	.8	6.0	2.4		
	2800	OTTA	21	2030	2136	165	10.4	5.2		
	2695	BOUL	45	2046	2059.5	43.5	176.0	48.0		
	2800	OTTA	4	2048	2058	38	350.0	60.0		
	8800	SGMR	47	2048.6	2058.8	27.4	1470.0	441.0		
	2695	SGMR	46	2049.5	2054.5	26.5	151.0	104.0		
	2695	SGMR	46		2058		347.0			
	8800	SGMR	30	2116	2116	159 U	63.0	25.2		
	2695	SGMR	30	2116	2116	159 U	15.0	7.5		
	8800	SGMR	46	2118.8	2119.1	2.2	4.6	2.7		
	8800	SGMR	46		2119.8		6.7			
	2695	SGMR	46	2118.2	2118.9	2.9	17.1	6.8		
	2695	SGMR	46		2119.9		16.5			
	2695	BOUL	3	2137	2138.5	4.5	3.0	1.0		
	2695	BOUL	45	2150	2153	8.5	11.0	4.0		
	2800	OTTA	46	2150	2152	5	7.4	1.9		
	2800	OTTA	2	2202.8	2203	1	2.4	1.2		
	2695	BOUL	8	2203.5	2206	3	57.0	20.0		
	8800	MANI	4	2223.5	2224.5	4.8	31.0	3.6		
	2695	MANI	4	2223.5	2224.4	4.8	85.0	8.8		
	2800	OTTA	4	2223.5	2224.5	3	74.0	10.0		
	2695	PENT	21	2338	2341	30	2.6	1.3		
	2695	MANI	1	2339.8	2340.5	2.3	4.4	.9		
	2695	PENT	1	2340	2340.5	1	5.2	2.6		
	2695	BOUL	8	2340	2341	2	7.0	2.0		
	2695	PENT	8	2346.5	2346.5		4.0			
5	2695	PENT	21	0030	0100	60	4.6	2.3		
	2695	MANI	1	0044	0044.2	1	7.0	.9		
	2695	PENT	8	0044.1	0044.1		13.4			
	2695	BOUL	3	0059	0102	5.5	4.0	1.0		
	2800	OTTA	8	0140.2	0140.2		5.8			
	8800	MANI	4	0652.8	0701.1	19.9	77.0	18.7		
	2695	MANI	2	0658.1	0707.6	15.7	3.8	1.9		
	8800	MANI	8	0707.2	0707.4	.6	2700.0	405.0		
	2800	OTTA	21	1155	1209	27	5.0	2.5		
	8800	SGMR	3	1156.1	1156.5	.9	12.3	2.5		
	8800	SGMR	3	1203.1	1203.8	9	244.0	48.8		
	2800	OTTA	3	1203	1204	6	142.0	36.0		
	2695	SGMR	3	1203.2	1203.8	6.3	146.0	29.2		
	8800	SGMR	22	1227.4	1233.8	18.1	11.1	6.7		
	2695	SGMR	1	1228	1229.5	1.9	2.1	.8		
	8800	SGMR	3	1323	1323.4	5.9	11.1	3.3		
	2695	BOUL	8	1404	1405	2	4.0	1.0		
	8800	SGMR	47	1507.1	1510.2	12.3	2270.0	681.0		
	8800	SGMR	47		1514.1		1370.0			
	2695	SGMR	46	1508.4	1510.6	13.1	378.0	121.0		
	2695	SGMR	46		1514.2		403.0			
	2695	BOUL	45	1508.5	1516	11.5	273.0	82.0		
	2800	OTTA	45	1509	1514	13	470.0	123.0		
	2800	OTTA		1509	1510.8	4	432.0			
	2800	OTTA		1513	1514	9	470.0			
	8800	SGMR	29	1519.4	1519.4	180.6	91.4	36.6		
	2695	SGMR	29	1521.5	1521.5	184.5	32.1	12.8		
	2800	OTTA	29	1522	1522	230	27.0	9.0		
	2695	BOUL	3	1857.5	1859	2.5	6.0	2.0		
	2695	BOUL	47	2032	2044.5	130.5	1140.0	252.0		
	2800	OTTA	21	2050	2220	210	11.0	5.5		
	8800	SGMR	47	2130.4	2138.9	34.2	4500.0	1350.0		
	8800	SGMR	47		2141.6		3170.0			
	2695	SGMR	47	2132.3	2138.9	32.1	1820.0	546.0		

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JUL 1974	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	2695	SGMR	47		2142.3		1777.0			
	2800	OTTA	47	2134	2142.5	22	2070.0	610.0		
	8800	MANI	47	2140 U	2141.8U	30.9U	2800.0U	270.0U		SUNRISE
	2695	MANI	47	2140 U	2142.3U	30.9U	4100.0U	405.0U		SUNRISE
	2800	OTTA	30	2156	2156	24	12.2	6.1		
	2800	OTTA	4	2159.5	2200.5	5	25.8	3.2		
	2800	OTTA	8	2225.8	2225.8		2.4			
	2800	OTTA	21	2230	2249	70	14.6	6.8		
	2695	MANI	22	2230.5	2248.5	41.9	19.6	9.8		
	2800	OTTA	8	2256.1	2256.1		21.0			
6	8800	MANI	2	0053.1	0053.2	1.1	10.8	5.4		
	2695	PENT	8	0141.5	0141.9	.5	16.8	8.4		
	2695	MANI	2	0244.7	0245.3	1.5	7.9	3.0		
	2695	MANI	41	0621.8	0622.4	5	3.0	1.0		
	2695	MANI	40	0653.7	0702.8	10.1	14.8	5.0		
	8800	MANI	41	0738	0816.1	45.2	405.0	5.6		
	2695	MANI	41	0735.7	0816.1	44.1	70.0	3.0		
	8800	SGMR	47	1035.4	1036	5.4	270.0	340.0		
	8800	SGMR	47		1037.2		1370.0			
	2695	SGMR	46	1034.8	1035.9	11.4	87.6	71.4		
	2695	SGMR	46		1037.3		240.0			
	2800	OTTA	23	1050	1150	290	17.6	5.8		
	2695	SGMR	47	1058	1106	67.1	204.0	245.0		
	2695	SGMR	47		1111.7		680.0			
	8800	SGMR	47	1102.7	1106	62.4	670.0	320.0		
	8800	SGMR	47		1111.7		800.0			
	2800	OTTA	47	1103	1111.5	15.5	780.0	134.0		
	2800	OTTA	40	1120	1125.5	8	8.0			
	2800	OTTA	2	1140	1141.5	2	10.2	5.1		
	2800	OTTA	3	1144.5	1145.7	3.5	15.2	7.4		
	2800	OTTA	1	1154.5	1154.6	1	3.8	1.9		
	2800	OTTA	40	1214.5	1215.1	1	3.2			
	2800	OTTA	8	1235.8	1235.8		5.0			
	2800	OTTA	41	1252	1252.5	6	17.8			
	8800	SGMR	46	1252.4	1254.3	9.6	14.3	15.9		
	8800	SGMR	46		1256.2		52.9			
	2695	SGMR	46	1252.3	1254.3	6	5.2	3.2		
	2695	SGMR	46		1256.3		10.7			
	2695	BOUL	45	1252.5	1253	9	15.0	3.0		
	8800	SGMR	46	1347.1	1347.5	4.7	18.9	37.3		
	8800	SGMR	46		1349.5		124.0			
	2695	SGMR	46	1347.2	1347.5	4	3.8	3.2		
	2695	SGMR	46		1349.5		10.7			
	2800	OTTA	1	1347	1348.5	4	4.6	2.3		
	2800	OTTA	8	1347.5	1347.5		8.8			
	2800	OTTA	8	1349.3	1349.5	.7	15.2	7.6		
	2695	BOUL	45	1348	1351	4	16.0	5.0		
	2800	OTTA	2	1520	1520.5	1	1.8	0.9		
	2695	SGMR	1	1520.2	1520.7	.7	2.6	.5		
	2695	BOUL	3	1521	1521.5	1	4.0	1.0		
	2800	OTTA	1	1533	1533.2	1	5.6	1.9		
	2695	BOUL	8	1534	1534.5	2	6.0	2.0		
	2800	OTTA	3	1621.5	1622	2	14.6	5.0		
	2695	BOUL	8	1622.5	1623.5	2.5	13.0	5.0		
	8800	SGMR	2	1642.5	1643.2	6.1	4.6	1.4		
	2695	SGMR	2	1642.5	1642.9	9.5	4.3	1.3		
	2695	PENT	1	1642.5	1643	1	2.6	1.3		
	2800	OTTA	22	1704	1733	42	2.6	1.6		
	2800	OTTA	28	1815	1842	27	5.0	2.5		
	8800	SGMR	47	1838.4	1904	86.1	1005.0	380.9		
	8800	SGMR	47		1904.7		1420.0			
	2695	SGMR	46	1842.2	1904.1	82.3	323.0	115.0		
	2695	SGMR	46		1904.7		383.0			
	2695	BOUL	45	1843	1906.5	125	177.0	35.0		
	2800	OTTA	46	1842	1905	106	308.0	42.0		
	2800	OTTA		1842	1845	7	62.0			
	2800	OTTA		1856	1905	10	308.0			
	2800	OTTA		1909	1910	35	148.0			
	2800	OTTA		1941.5	1948.5	46.5	63.0			
	8800	SGMR	29	2004.5	2004.5	37.2	27.3	10.9		
	2695	SGMR	29	2004.5	2004.5	33	62.6	25.0		
	2800	OTTA	30	2028	2028	52	12.0	6.0		
	8800	SGMR	2	2052.1	2052.4	2.8	6.3	3.7		
	2800	OTTA	1	2052	2052.5	3	8.4	2.8		
	2695	SGMR	4	2052.3	2052.9	2.6	10.2	3.1		
	2695	BOUL	21	2053	2053.5	27.5	10.0	3.0		
	2800	OTTA	8	2115.5	2115.6	.5	6.0	3.0		
	2695	SGMR	2	2115.8	2116.1	2	3.7	1.1		
	2695	BOUL	45	2116	2117.5	6	9.0	3.0		
	8800	SGMR	4	2117	2118.8	2.7	18.5	5.5		
	2800	OTTA	26	2240	2300	20	-3.8	-1.9		
	2695	PENT	20	2305	2325	40	2.0	1.0		
7	8800	SGMR	46	1005.3	1006	20.4	215.0	58.2		
	8800	SGMR	46		1010.3		291.0			
	2695	SGMR	46	1005.3	1010.5	15.1	180.7	36.1		
	2695	SGMR	46		1013.4		88.0			
	8800	SGMR	29	1025.7	1025.7	13.1U	6.7	2.7U		
	2695	SGMR	29	1020.4	1020.4	25.6U	15.5	6.2U		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
JULY 1974

JUL 1974	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	8800	SGMR	4	1216.3	1220.1	15.8	71.8	22.8		
	2800	OTTA	21	1216	1257	95	10.2	5.0		
	2695	SGMR	46	1219.4	1221.7	10	26.4	8.2		
	2695	SGMR	46		1224.7		40.9			
	2800	OTTA	46	1219	1224.7	12	37.0	12.5		
	2800	OTTA		1219	1221.5	3.3	26.0			
	2800	OTTA		1223.3	1224.7	8.7	37.0			
	8800	SGMR	1	1452.2	1453	1.7	4.2	1.3		
	2695	SGMR	1	1452.1	1453.5	2.9	1.6	.5		
	2800	OTTA	1	1452	1453.5	3	1.2	0.6		
	2800	OTTA	26	1500	1540	85	-8.6	-4.3		
	8800	SGMR	3	1512.8	1513.8	13.8	11.3	3.4		
	2800	OTTA	1	1512.5	1513.5	5	2.2	1.1		
	2695	SGMR	1	1512.7	1513.6	6.5	1.2	.4		
	2800	OTTA	23	1625	1918	275	9.0	4.5		
	8800	SGMR	22	1820.2	1831.8	29.2	8.8	5.3		
	2695	SGMR	20	1826	1839.5	20.6	3.4	2.0		
	2695	SGMR	22	2102.8	2117.4	33.8	7.4	3.0		
	2800	OTTA	21	2105	2140	75	4.8	2.4		
	8800	SGMR	22	2114	2117.5	35.7	17.6	7.1		
	2800	OTTA	2	2115	2117.2	6.5	5.8	2.9		
	2695	BOUL	45	2116.5	2119	7.5	7.0	2.0		
	2695	PENT	8	2340.2	2340.3	.5	3.4	1.7		
8	2695	PENT	20	0140	0145	12 D	5.6			
	2800	OTTA	26	1310	1330	80	2.4	1.2		
	8800	SGMR	4	1313.7	1316	11.8	22.7	6.8		
	2695	SGMR	1	1315.9	1316.3	3.4	1.9	.7		
	8800	SGMR	3	1539.1	1540.5	4.3	395.0	118.5		
	2695	SGMR	3	1539.8	1540.5	3.9	153.0	45.9		
	2800	OTTA	3	1539.8	1540.7	6	192.0	25.0		
	2695	BOUL	45	1540	1541.5	13.5	80.0	22.0		
	8800	SGMR	29	1543.4	1543.4	57.7	10.9	4.4		
	2695	SGMR	29	1543.7	1543.7	95.7	9.3	3.7		
	2800	OTTA	30	1545.8	1545.8	180	4.8	3.0		
	2800	OTTA	1	1549.5	1550	1	1.4	0.7		
	2800	OTTA	1	1634.5	1634.9	1	2.0	1.0		
	2800	OTTA	8	1640	1640.3	2	38.0			
	8800	SGMR	4	1853.3	1859.2	8.8	12.3	3.7		
	2800	OTTA	2	1857	1859	3	3.4	1.5		
	2695	SGMR	2	1857.9	1859.3	1.9	2.8	1.1		
	2695	BOUL	3	1859.5	1901	2.5	5.0	2.0		
	8800	SGMR	3	2144.4	2144.6	3	38.2	15.3		
	8800	SGMR	4	2221.5	2224.9	9	99.2	29.8		
	8800	MANI	4	2223.7	2224.9	5.5	133.0	54.0		
	2695	MANI	4	2223.7	2225	4.3	31.8	5.2		
	2800	OTTA	4	2224	2225	5	36.0	9.0		
	2695	BOUL	21	2224	2225.5	80.5	32.0	3.0		
	2695	SGMR	4	2224.4	2225.1	4.1	27.6	8.3		
	2800	OTTA	29	2229	2229	90	4.8	2.6		
9	2695	BOUL	3	0114	0115.5	3	3.0	1.0		
	8800	MANI	4	0148.5U	0149.5U	4.7U	63.0U	22.3U		
	2695	MANI	4	0148 U	0150 U	9 U	22.3U	7.8U		
	2695	PENT	4	0148	0150	4	32.0	16.0		
	8800	MANI	4	0517.1U	0523.5U	12.9U	24.2U	5.6U		
	2695	MANI	4	0519.5U	0520.9U	6 U	11.6U	1.9U		
	2695	MANI	2	0713.4U	0714.3U	1.3U	7.8U	1.0U		
	2695	MANI	1	0918.4U	0918.8U	.9U	4.9U	1.0U		
	8800	SGMR	45	1135.1	1136.1	12.4	54.2	16.3		
	8800	SGMR	45		1142.6		29.4			
	2695	SGMR	45	1135.6	1136.2	14.4	50.2	18.3		
	2695	SGMR	45		1142.8		61.1			
	2800	OTTA	45	1135.8	1143	17	55.0	12.2		
	2800	OTTA		1135.8	1136.2	6.2	45.0			
	2800	OTTA		1142	1143	10.8	55.0			
	8800	SGMR	3	1221.6	1222	2.2	30.2	9.1		
	2695	SGMR	1	1221.7	1222.3	3.4	6.1	1.8		
	2800	OTTA	1	1221.8	1222	3	5.6	2.0		
	8800	SGMR	4	1355.6	1356.6	5.1	58.0	17.4		
	2695	SGMR	46	1355.7	1356.7	4.8	38.4	33.6		
	2695	SGMR	46		1357.6		112.0			
	2800	OTTA	3	1356	1357	4	37.0	15.0		
	2695	BOUL	45	1357	1359	6.5	56.0	22.0		
	2800	OTTA	8	1357.8	1357.8		143.0D			
	8800	SGMR	45	1446.9	1447.2	3.7	48.7	14.6		
	8800	SGMR	45		1448		21.8			
	2800	OTTA	45	1447	1448	4	5.4	1.8		
	2695	SGMR	45	1447.1	1447.5	2.4	5.1	1.2		
	2695	SGMR	45		1448.3		5.8			
	2695	BOUL	45	1448.5	1449.5	4	5.0	2.0		
	8800	SGMR	4	1548.3	1548.7	3.8	21.8	6.6		
	2695	SGMR	45	1548.4	1548.7	3.9	11.2	3.4		
	2695	SGMR	45		1549.4		9.9			
	2800	OTTA	45	1548.5	1549	4	10.6	2.7		
	2695	BOUL	45	1549.5	1550	5.5	12.0	4.0		
	2800	OTTA	45	1730.2	1734.5	9.8	43.0	15.2		
	2695	BOUL	45	1731	1736	21	41.0	13.0		
	2800	OTTA	29	1740	1740	28	6.8	3.0		
	8800	SGMR	46	1852.5	1853.3	4.6	77.1	29.4		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
JULY 1974

JUL 1974	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	8800	SGMR	46							
	2695	SGMR	46	1852.9	1853.9		146.8			
	2695	SGMR	46		1853.3	9.7	75.0	24.1		
	2800	OTTA	4	1853	1854.3		120.6			
	2695	BOUL	45	1854	1854.2	8	112.0	25.0		
	2800	OTTA	21	2110	1856.5	12.5	65.0	22.0		
	2695	PENT	20	2337	2340	190	2.2	1.2		
						15	2.4	1.2		
10	2695	MANI	1	0900	0900.8	1.4	2.8	.9		
	2800	OTTA	1	1321.8	1322	1	1.8	0.9		
	2800	OTTA	21	1605	1613	65	1.0	0.5		
	2800	OTTA	1	1607.5	1609	2.5	1.2	0.6		
12	2800	OTTA	1	1522.8	1523	1	1.0	0.5		
16	2800	OTTA	20	1430 E	1520	130 D	1.6			
17	2800	OTTA	20	1400	1430	105	2.2	1.1		
	2695	BOUL	45	2122	2125	6	7.0	3.0		
	2695	BOUL			2125.5	6	7.0	3.0		
18	2695	BOUL	45	0116	0117.5	2.5	6.0	2.0		
	2800	OTTA	24	1855	1902	7	1.0	0.5		
	2800	OTTA	24	1902		420 D	1.0			
	2800	OTTA	22	1945	2245	295	4.0	2.8		
	2695	SGMR	20	2003	2015.5	18.1	2.2	1.3		
19	2695	BOUL	8	0129.5	0130	1.5	5.0	2.0		
20	2800	OTTA	1	1051.5	1053	2.5	1.0	0.5		
	2800	OTTA	1	1625.5	1625.8	1	1.0	0.5		
	8800	SGMR	1	1717	1717.1	.5	5.0	1.5		
	2695	SGMR	1	1716.8	1717.3	1.2	2.6	.8		
	2800	OTTA	2	1717	1717.2	1	4.6	1.6		
	2695	BOUL	.8	1717.5	1718.5	1.5	6.0	2.0		
21	2800	OTTA	20	1410	1440	60	1.2	0.6		
	8800	SGMR	3	1728.6	1728.9	1	17.2	5.2		
	2695	SGMR	3	1728.7	1728.9	1.4	16.6	5.0		
	2800	OTTA	3	1728.5	1728.8	2	17.6	4.0		
	2695	BOUL	8	1729	1730	2.5	19.0	6.0		
22	2800	OTTA	27	1058		132	2.2	1.6		
	2800	OTTA	24	1058	1104	6	2.2	1.1		
	2800	OTTA	24	1104		61	2.2			
	2800	OTTA	26	1205	1310	65	-2.2	-1.1		
	2800	OTTA	20	1605	1638	155	1.6	0.8		
	2695	PENT	20	2250	2435	180 D	3.4			
23	2800	OTTA	20	1410	1500	90 D	1.6			
	2695	BOUL	3	1423	1425.5	5.5	5.0	2.0		
	2800	OTTA	20	1829	1844	60	1.6	0.9		
	2695	BOUL	3	2221.5	2222.5	2	3.0	1.0		
	2695	PENT	23	2230	2450	205 D	5.0			
	2800	OTTA	1	2231	2232	2.5	2.6	1.3		
	2695	BOUL	3	2351	2352	1.5	4.0	1.0		
	2695	BOUL	45	2354	2355.5	6	65.0	20.0		
	2695	BOUL			2356.5	6	65.0	20.0		
	2695	PENT	1	2541	2542	2	1.6	0.8		
24	2800	OTTA	20	1530	1640	120	1.4	0.7		
25	2695	BOUL	3	1926.5	1928.5	4	5.0	2.0		
	2695	PENT	24	2130	2515	225	5.2	2.5		
	2695	PENT	24	2515		40 D	5.2			
26	2800	OTTA	1	2124	2124.6	1.2	2.8	1.2		
	2695	BOUL	3	2124	2125	1.5	4.0	1.0		
	2800	OTTA	4	2227.5	2228.8	5	17.8	6.6		
	2695	SGMR	4	2227.6	2228.8	3.1	23.6	7.1		
	2695	BOUL	45	2228	2229.5	5.5	19.0	7.0		
	2695	MANI	4	2227.7U	2228.8U	5.1U	19.0U	7.6U		
	2695	BOUL	45	2315.5	2316.5	4	50.0	18.0		
28	2695	BOUL	45	1707.5	1713.5	12.5	4.0	1.0		
	2800	OTTA	20	1709	1712.5	24	1.6	0.8		
29	2800	OTTA	22	2236	2240	145	2.8	1.3		
30	2695	BOUL	45	1738	1740	3.5	70.0	21.0		
	2800	OTTA	45	2044.9	2045	10	2.0	1.0		
31	8800	MANI	1	0419.5	0422.7	8.3	5.6	1.9		
	2695	MANI	4	0419.5	0423.7	9.7	14.8	4.1		

Observatories:

BOUL = Boulder MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill

26
Jul 74

Microwave Solar Emission - June 28th to July 10th 1974.

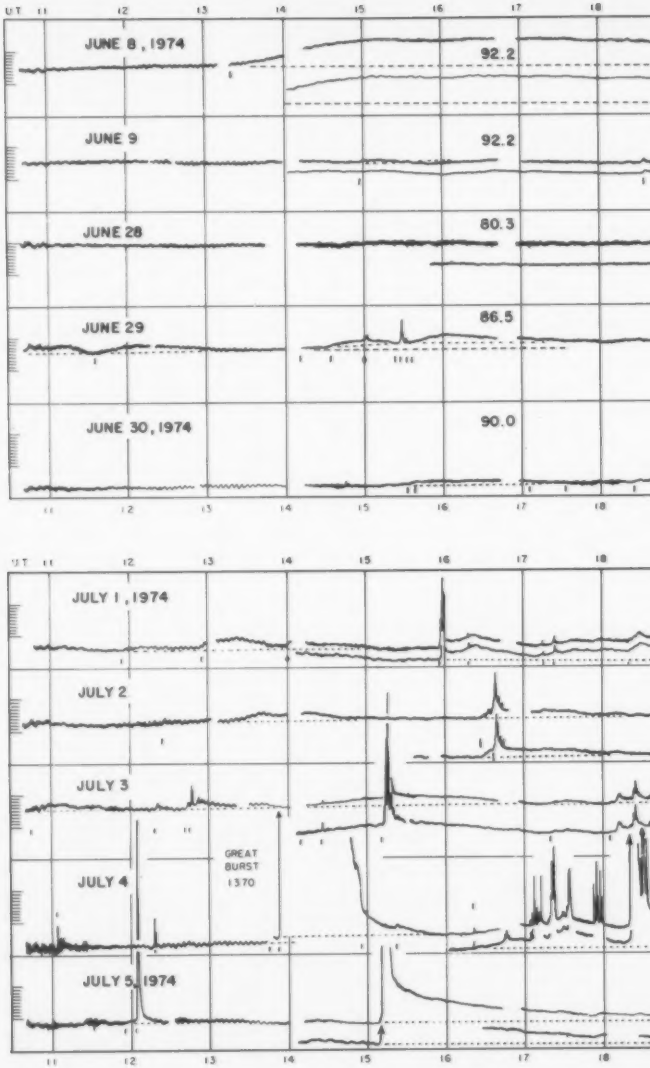
A.E. Covington

Details of the variations of the 2800 mhz and the 2700 mhz solar flux observed at the Algonquin Radio Observatory, (ARO) and at the Dominion Radio Astrophysical Observatory, (DRAO) are presented in the accompanying traces of the 1 1/2 inch records for the period June 28th to July 10th inclusive. The episode of solar activity described is obviously bracketed with the very quiet days of June 29th and July 10th. The later day has two small bursts which would normally be disregarded if other activity were present. During the combined observing period, five Great Burst, defined as those with intensity greater than 500 flux units, were recorded. The profiles are different and are accompanied with a great variety of other types with intensities ranging downwards from 500 to about 1 flux unit with the exception of the absorptive type, so prominent from the past April 30th to May 3rd. The intense bursts are all off scale in the linear records and are further modified in the tracings since the panels only allow a range of about 25 flux units. However, all intense bursts are recorded in a logarithmic channel and the profile for the event of July 4th observed at ARO is presented, together with its conversion calibration for a linear scale. (Observed profile from DRAO is placed underneath but not to scale.) This profile has been selected since it shows similarity to the average profile found from examination of a large number of great bursts by J.D. Fletcher. (1964) The essential parts of the event is a precursor, a short duration intense impulsive burst followed by a 2nd longer duration impulsive burst and with a post burst increase. Various types of fluctuations may be superimposed upon any one of the four components, The first peak for July 4th reached a value of 1370 SFU when a white light flare was observed and reported by R. Pike of Mississauga Ontario. The second peak shows a highly damped oscillation only completely recorded in the record from DRAO. The precursor has an intensity of 3.6 SFU and is followed by a post burst increase of approximately the same intensity, which lasts for the rest of the day as far as can be found, and is combined into the calibration made at 17 UT. This precursor and PBI are combined into a Rise Only type with a post burst enhanced level.

The long enduring variations of flux on the 7th can be interpreted in various ways depending upon whether the quiet sun level for the day is assumed as slowly declining or remains constant at two levels with a connecting "Fall Only" type of burst occurring at 15:20 UT. The drop of -8.6 SFU readily corrects for most of the difference in the calibration levels of 117.5 and 107.3 SFU found for the 6th and the 7th.

It has been noted that the Great Burst of July 4th occurred 27 days after a Major Long Enduring, low intensity burst of June 8th which was described in last month's report. The profile of this event is traced for this month, and cursory examination of the high resolution drift curves indicates that the center of activity is on the western part of the solar disc. The association of the burst with a flare of known position located this source in the same general area, but one rotation later, and it thus seems that the Major Simple iii F (GRF) is a preliminary manifestation or the episode now being reported. The absence of superimposed shorter duration burst for June 8th indicates that the structure of the center of activity has yet to be disorganized. The magnitude of this long enduring event was automatically included in the operational reports of daily flux which appear plotted in the graph of the Ottawa flux shown in the SESC Preliminary Report, No. 188 issued 12 June 1974. It can be easily recognized as the excess flux above the general trend for the single day of June 8th.

J.D. Fletcher - American Institute of Aeronautics and
Astronautics Volume 2, P 2193, 1964.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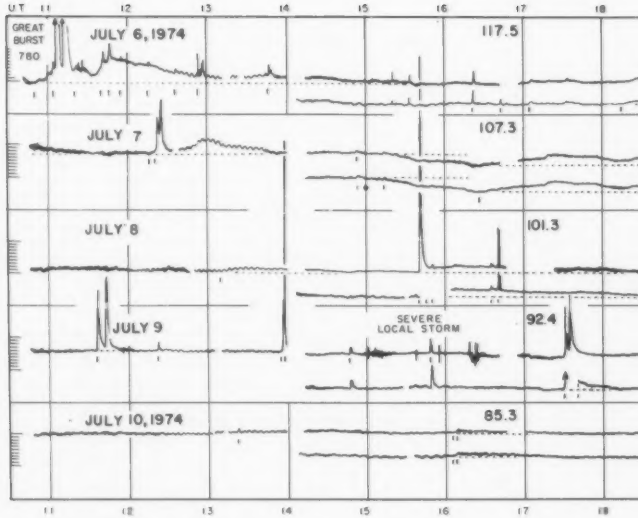

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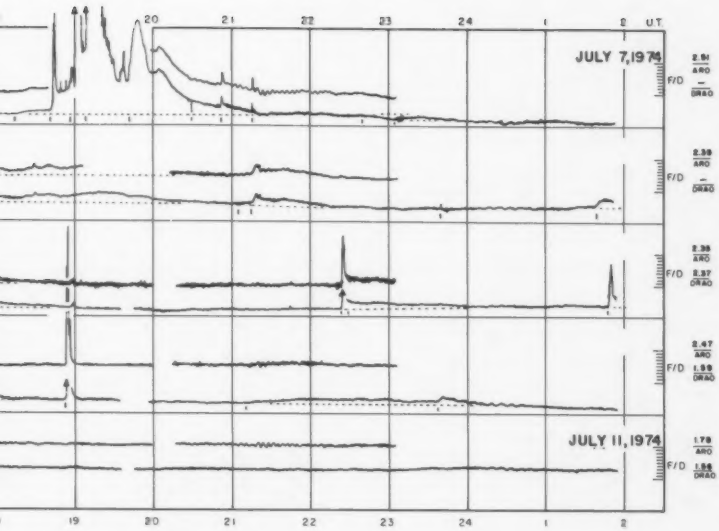


TIONS AT 2800 MHz AND 2700 MHz COPIED FROM
ALGONQUIN RADIO OBSERVATORY–ARO–AND FROM
DIO ASTROPHYSICAL OBSERVATORY–DRAO.
(RECORDS 1 $\frac{1}{2}$ INCH PER HOUR)

RESIDUAL RECEIVER NOISE

RESIDUAL RECEIVER NOISE

ERIC SCINTILLATIONS FOLLOWED BY RECEIVER NOISE

RENCE BETWEEN DIRECT AND REFLECTED WAVES FOLLOWED BY RECEIVER NOISE

R EMISSION AS ZERO REFERENCE FOR BURST

R CALIBRATION OR OTHER ADJUSTMENT

↑ BURST PEAK NOT SHOWN, OFF SCALE

ET SUN, 2800 MHz SERIES C – OBSERVED VALUES

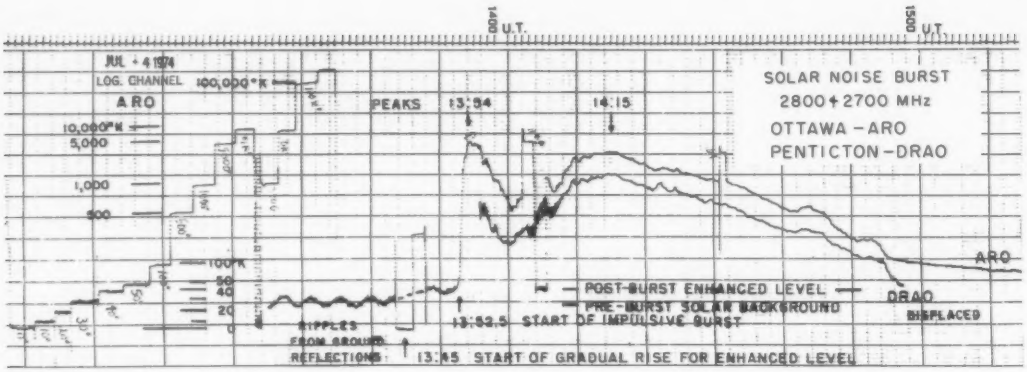
VISION AT OBSERVATORY INDICATED

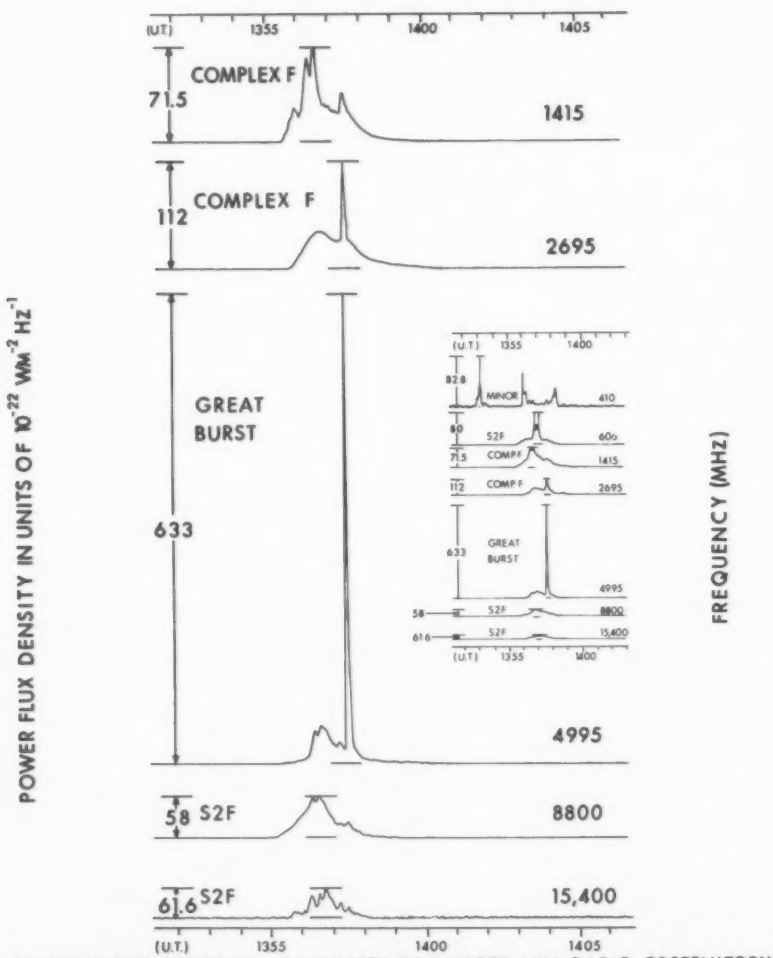
29
Jul 74

30
Jul 74

SELECTED SOLAR NOISE BURSTS

JULY 1974





RADIO BURST OBSERVED 9 JULY, 1974 SAGAMORE HILL RADIO OBSERVATORY
HAMILTON, MASS.

PIONEER VIII

JULY 1974

Date July 1974	DSN Coverage (UT)	Data Time (UT)	ESP (°)	SOLAR WIND[1]				IP E-FIELD[2]	IMF[3]		COSMIC RAY PROTONS[4] (particles/sec)	
				U_{H^+} (km/sec)	N_{H^+} (H^+/cc)	T_{H^+} (x10^{6}°K)	TAU (days)	400 Hz (mv)	|B| (γ)	φ (°)	>13.9 Mev	>64 Mev
23	1312-1542	1300	132.5	412.	---	0.059	9.82	0.277	6.8	306.	6.8	1.16
		1400		379.	---	.054		.211	6.5	300.	6.85	1.19
		1500		386.	---	.054		.246	7.5	288.	6.33	0.91

[1] Wolfe - NASA/ARC
[2] Scarfe - TRW, Inc.
[3] Ness - NASA/Goddard & Mariani - Univ. of Roma
[4] Webber - Univ. of N.H.

ESP = Earth-Sun Probe Angle.

PIONEER IX

JULY 1974

Date July 1974	DSN Coverage (UT)	Data Time (UT)	ESP (°)	SOLAR WIND[1]				IP E-FIELD[2]	IMF[3]		COSMIC RAY PROTONS[4] (particles/sec)	
				U_{H^+} (km/sec)	N_{H^+} (H^+/cc)	T_{H^+} (x10^{6}°K)	TAU (days)	400 Hz (mv)	|B| (γ)	φ (°)	>13.9 Mev	>40 Mev
15	1250-1555	1300	-105.9	475.	---	---	-7.84	0.155	9.4	341.	5.47	1.04
		1400		470.	---	0.307		.172	10.4	325.	5.53	1.1
		1500		495.	---	---		.155	10.3	334.	5.39	1.03
		1600		496.	---	---		.14	10.6	007.	5.53	1.04
23	0926-1227	1000	-105.7	508.	---	0.083	-7.84	0.156	4.2	004.	5.36	1.14
		1100		515.	---	---		.125	4.5	299.	5.35	1.2
		1200		509.	---	.112		.155	5.4	339.	5.34	1.14
26	1138-1557	1200	-105.6	359.	---	.056	-7.81	.195	5.8	230.	5.36	1.03
		1300		381.	---	.067		.196	7.5	332.	5.34	1.25
		1400		365.	---	.058		.198	5.2	255.	5.12	.95
		1500		388.	---	---		.225	6.6	066.	5.27	1.04
		1600		412.	---	.064		.163	7.1	034.	5.14	1.04

Note: Due to higher priority program requirements, no Pioneer 9 coverage was obtained during the exciting solar activity of the first part of July.

However, PN-10 and -11 coverage was very good. Monitoring of the plasma probe on these spacecraft provided the following quick look data:

PN-11 @ approximately 4.3 AU with an ESP of -059.4° recorded a solar wind velocity jump from approximately 500 to 720 km/sec. between 1530 UT 13 Jul 74 and 0715 UT 14 Jul 74.

PN-10 @ approximately 5.55 AU with an ESP of -064.9° recorded a solar wind velocity jump from approximately 500 to 635 km/sec. between 2120 UT 18 Jul 74 and 0615 UT 19 Jul 74.

Assuming these velocity jumps were due to an IP shock wave or plasma associated with the large 2B flare @ S15W26 which peaked at 2142 UT 5 Jul 74, it is reasonable to assume that the solar wind velocity in the vicinity of PN-9 (@ 0.98 AU with an ESP of -106.1°) could have been greater than that observed @ either PN-10 or -11, perhaps as great as 1000 km/sec.

[1] Wolfe - NASA/ARC
[2] Scarf - TRW, Inc.
[3] Sonett and Colburn - NASA/ARC
[4] Webber - Univ. of N.H.

Note: Data sampled hourly unless otherwise noted.

ESP = Earth-Sun Probe Angle.

INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1893	1971 DEC 20	T	A	A	A	A	A	A	A	T	T	T	T	-	T	T	T	T	T	T	T	T	T	T	-	T	T	T
1894	1972 JAN 16	T	A	A	A	A	T	T*	T	T	T	T	T	T	T	T	T	T	A	A	A	T	T	T	T	T	TA	A
1895	FEB 12	A	T	A	A	A	A	T	T	T	TA	A	-	A	T	T	T	T	TA	A	T	T	T	T	TA	A	A	
1896	MAR 10	A	A	A	A	A	A	A	A	A	A	A	T	A	T	T	T	T	A	A	T	T	T	T	T	T	A	A
1897	APR 6	A	T	T	A	T	T	T	T	T	T	T	T	T	A	T	T	A	A	A	A	A	-	A	A	T	TA	A
1898	MAY 3	A	A	A	-	A	T	T	T	T	T	T	T	T	A	A	T	A	A	A	A	A	T	A	T	T	A	T
1899	MAY 30	A	A	*	A	A*	T	T	A	T	T	T	A	-	-	-	-	-	T	-	A	A	T	T	T	T	TA	A
1900	JUN 26	A	A	A	A	A	A	A	AT	T	T	T	TA	A	T	T	A	A	A*	A*	A	T*	T	T	T	T	T	TA
1901	JUL 23	A*	A*	A*	A	A	A	A	A*	T	T	A	A	A	-	A	T	T	T	T	T	A	T	T	T	T	A	-
1902	AUG 19	-	-	A	A	A	A	A	T	A	A	A	A	T	A	A	A	T	T	T	T	A	A	T	A	A	A	-
1903	SEP 15	A	T*	A	A	A	A	A	T	A	A	A	-	-	-	-	-	T	T	T	T	T	-	T	A	A	A	T
1904	OCT 12	T	-	-	A*	T	T	T	A	A	T	A	A	A	A	A	A	AT	T	AT	T*	T	-	A*	AT	T	T	*	A
1905	NOV 8	A	A	A	AT	AT	AT	T	T*	A	A	A*	AT	A	A	AT	T	T	TA	T	T	T	A	A	A	A	AT	T
1906	DEC 5	T	T	AT	-	-	T	T	AT	-	T	T	A	-	-	T	TA	A	T	T	T	A*	T	T	T	T	AT	T
1907	1973 JAN 1	T	T	T	T	T	T	T	-	AT	T	-	-	TA	A	A	A	A	A	T	-	-	T	-	T	-	T	T
1908	JAN 28	T	A	T	T	T	T	T	T	A	TA	A	A	AT	TA	AT	TA	AT	-	A	A	T	T	T	T	T	T	T
1909	FEB 24	T	T	TA	T	T	-	TA	A	A	T	A	A	A	AT	A	A	A	TA	A	A	TA	A	A	T	T	T	T
1910	MAR 23	T	T	T	A	T	T	T	TA	A	TA	A	A	-	A	A	TA	A	A	AT	T-	-	T	T	T	T	T*	T*
1911	APR 19	T	AT	T-	T	T	T	A	T	T	TA	A	A	A*	A	AT	TA	A*	T	A	TA	T*	AT	A	T	A	T	A*
1912	MAY 16	T	T	T	T	T	T	TA	T	A	AT	T	A	A	A	A	A	A*	A	A	A	A	T*	-A	A	-	T	T
1913	JUN 12	T*	T	-	T	T*	A	T	T*	T*	T	T	AT	A	A	T	-	T	A	A	A	A*	AT	-	T	A	A	T
1914	JUL 9	T	T	A	T	T	A	T*	T*	A	AT	-	A	T	TA	T	T	T	A	A*	A	A*	TA	A	TA	T*	T*	T
1915	AUG 5	T	A	A	AT	A	T	T*	T	*	AT	T	AT	T	A	TA	T	T	A	A	AT	A*	AT	A	A	TA	A*	A
1916	SEP 1	TA*	T	T	AT	A	TA*	A	*	T	T	T	A	A	A	T	T	T	A	T	A	A*	A	T*	A	A	A*	A
1917	SEP 28	A*	A	AT	T	T	A*	A	A	A	A	T*	A	AT	A*	AT	T*	AT	AT	T	T	T*	T	T	T	T*	T	T	T*	T	T	T*	AT	T	A	A	AT	A	T	T*	T
1918	OCT 25	T*	T	T*	T	A	TA	A*	A	A*	T	A	T*	T	A	T	A	A*	A	A*	A	T	A	TA	T	T*	T	T	T	T	T	T*	TA	T*	T	T*	T	T	*	A	A	A	A	AT	A	T	T	A	A*	-	A	A
1919	NOV 21	A	*	T*	T	T	-	A	A	A*	A	AT	T	A	T	A	*	T	*	A	*	A	A*	A	A	A	T	TA	T	T	T	T	T*	T	*	T*	T	T	T	TA	TA	A*	A	T*	T	T*	T	-	T*	A	A*	TA	A*	A	T	T
1920	DEC 18	T	T	AT	A	A	T	A*	T	A	TA	A*	T	A	A*	*	A	A	A	*	AT	T	T*	T	T	T	T	T	T	*	T	T	T	T	T	T	T	A	T	AT	T	A	T	T	T	T	T	AT	TA	T	T	T*	A	A*	T	AT	T
1921	1974 JAN 14	T	A	A*	T	-	T	T	A	A	T	A	A	A	A	A*	A	-	A	A	-	AT	-	T*	T	T*	TA	T	*	T	A	T*	T	T	T	T	A*	-	T	-	T	TA	A	-	-	-	T	T	T	-	T	-	T	-	A
1922	FEB 10	A	-	A	-	-	*	A	A	A	A	A	A	A	A	TA	T	-	A	-	A	-	*	T	T	T	T	T	T	-	A	-	-	T	T	T	T	T	T	T	TA	T	T	T	T	T	T	T	T	T	T	T	A	A	A	A
1923	MAR 9	A	A	A	A	A	A	A	A	A	A	A	A	T	T	TA	TA	A	AT	A	A	A	A	T	A	T	TA	T	A	T	T	A	T	A	T	A	A	T	A	A	T	A	T	T	T	T	T	T	T	T	TA	T	T	TA	T	TA	TA	-	A	TA
1924	APR 5	A	A	A	A	A	-	TA	A	A	A	A	A	A	A	*	A	A	A	A	A	A	A	A	T	T	TA	TA	TA	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	A	TA	A	A	T	A	A	A	-	-	-
1925	MAY 2	-	-	A	A	A	A*	AT	T	A	AT	AT	T	A	T*	TA	A	A	TA	T*	A	A*	AT	AT	T	T	T	T	T	T	T	T	T	TA	T*	T	T	T	T	T	T	T	TA	-	T	T	TA	T*	T	T	A	-	-	-
1926	MAY 29	T	T	A	A	A	*	-	A	A	A	A	*	A	A	*	-	TA	*	A	A	A	A	T	T	T	T	TA	TA	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	A	*	-	T
1927	JUN 25	TA	TA	A	A	-	A	-	A	A	T	A*	A	A	A	A	A	A	A	A	-	TA	TA	-	T	T	T	T	T	T	T	-	T	T	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
1928	JUL 22	T	T	A	A	A	A	AT	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

T = towards the sun
A = away from the sun
* = effect doubtful or not discernable
- = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field made from magnetograms produced by magnetometers at the Vostok Antarctic Station of the USSR for the first half of the day and the Thule Geopole Station of the U.S. Air Weather Service for the second half.

LOW ENERGY SOLAR COSMIC RAY PROTONS

NOAA SATELLITES 2 AND 3

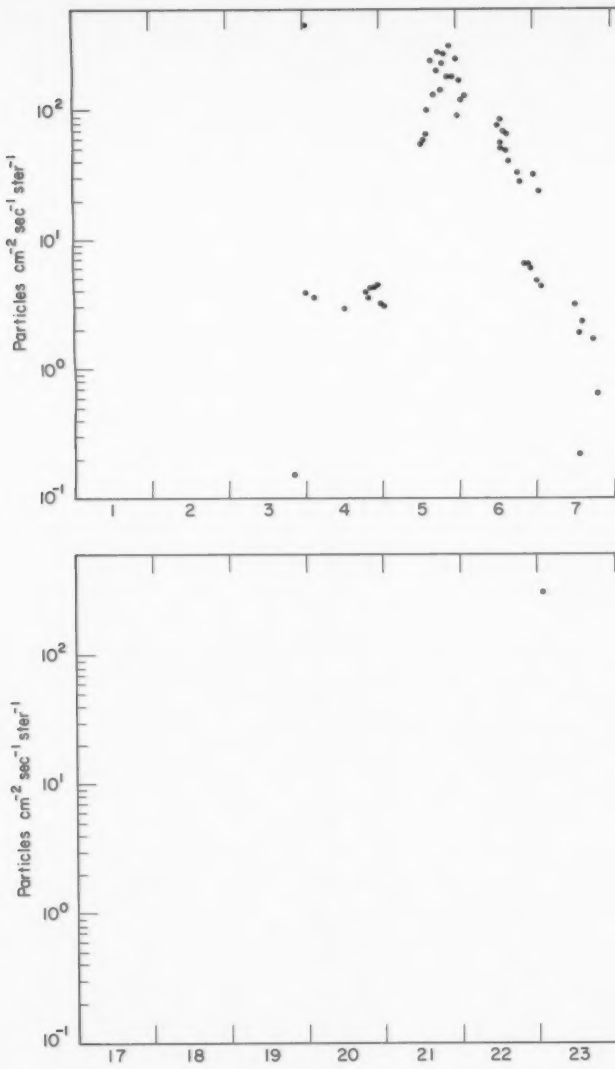
NOAA satellites in the Improved TIROS Operational Satellite (ITOS) system are launched for NOAA by the National Aeronautical and Space Administration. They are placed into circular, sun-synchronous near-polar orbits at average altitudes of 1500 km above the earth's surface, with orbital inclinations of 102° (retrograde), and average nodal periods of 115 minutes. Thus these satellites make 12½ orbital passes every 24 hours. The earth rotates 28.75° during the 115 minutes between successive orbital tracks. NOAA 2 was launched 15 October 1972, and NOAA 3 was launched 6 November 1973.

The accompanying graphs display the observed flux of low energy cosmic ray protons in the >10 Mev, >30 Mev and >60 Mev energy ranges averaged over each polar cap. The polar cap is identified as satellite geomagnetic latitudes exceeding 75° using a centered dipole model. Data gaps result simultaneously in the three plots when the satellite orbit does not exceed 75° in latitude. The accumulated values for each 12-second sample are averaged for the duration of the traverse over a polar cap and plotted at the half-hour in which the satellite entered the polar cap.

These plots combine data from both satellites and for both polar caps. Two values may appear for the same half hour when both satellites report for the same time or, rarely, when the data sampling technique provides two values for a polar cap. In these cases, the values are not averaged but plotted as two raw data points for the same half-hour.

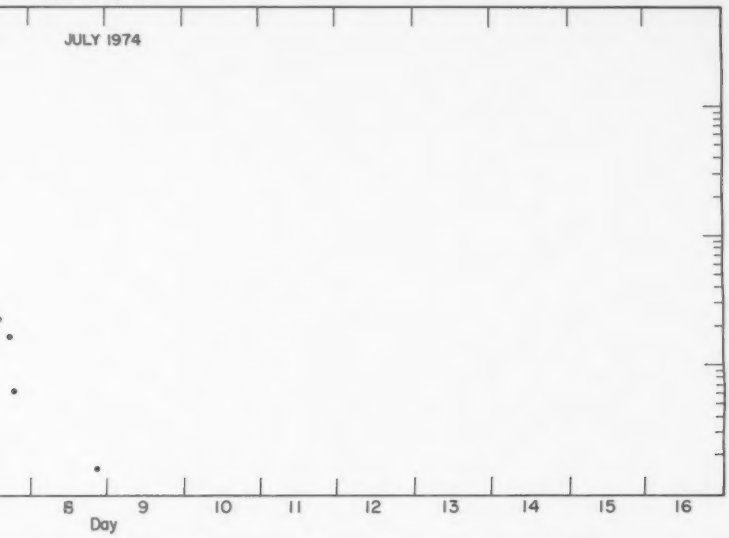
The sensitivity of the >30 Mev and the >60 Mev instruments is sufficient to monitor variations in the nominal cosmic ray proton background level. This noise region is defined as less than 2.5×10^{-1} particles cm^{-2} sec^{-1} $ster^{-1}$ and is shown by the shaded area on the two plots. However the >10 Mev instrument is not sensitive to protons in this region and only values greater than the background are plotted.

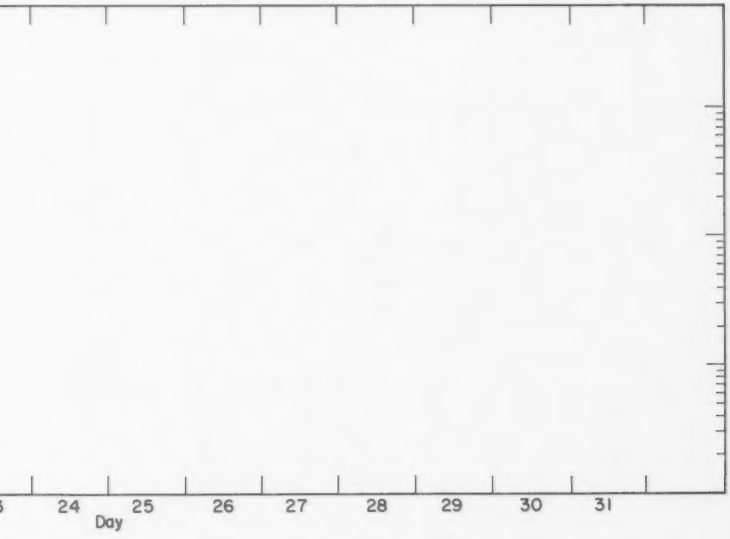
These data are provided by Dr. D. J. Williams of NOAA's Space Environment Laboratory. They are recieved in near-real time and should be considered as preliminary raw data subject to future correction.

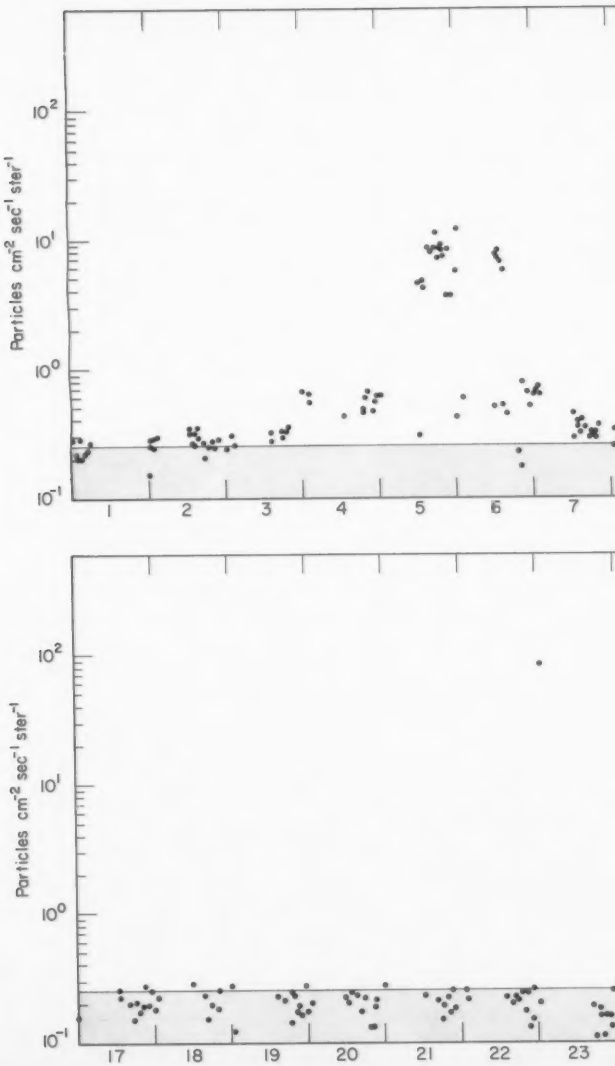

>10 Mev Pr
Particles cm⁻² sec⁻¹ ster⁻¹
10²
10¹
10⁰
10⁻¹
1
2
3
4
5
6
7
Particles cm⁻² sec⁻¹ ster⁻¹
10²
10¹
10⁰
10⁻¹
17
18
19
20
21
22
23

Protons from NOAA 2 and 3

Preliminary data

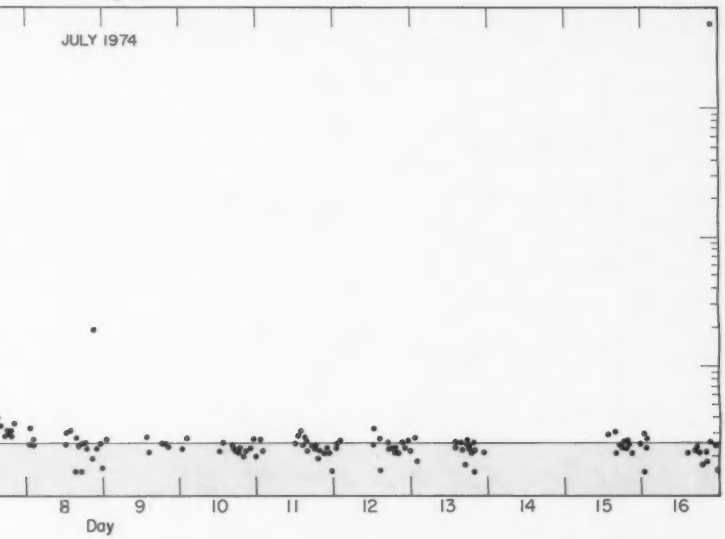


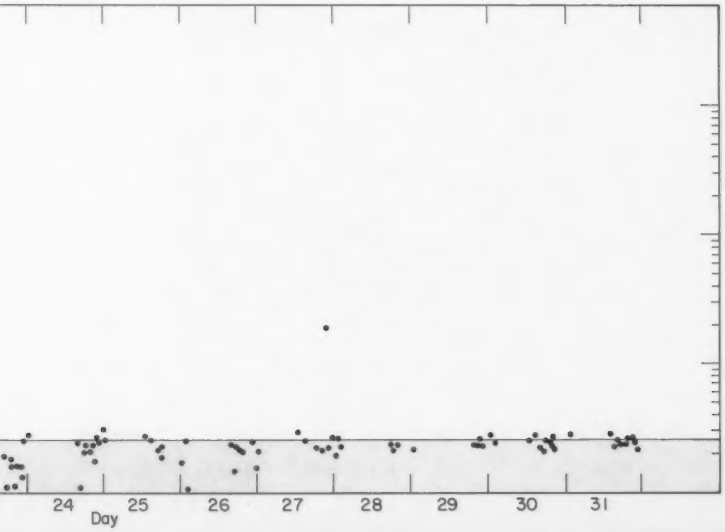



>30 Mev Pro
Particles cm⁻² sec⁻¹ ster⁻¹
10²
10¹
10⁰
10⁻¹
1
2
3
4
5
6
7
Particles cm⁻² sec⁻¹ ster⁻¹
10²
10¹
10⁰
10⁻¹
17
18
19
20
21
22
23

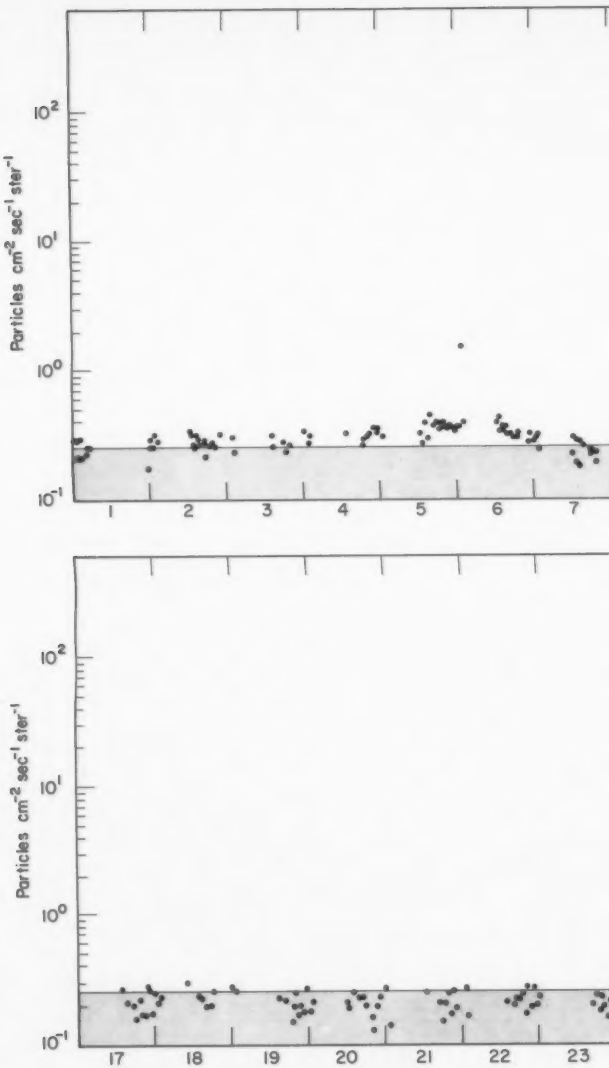
Protons from NOAA 2 and 3

Preliminary data

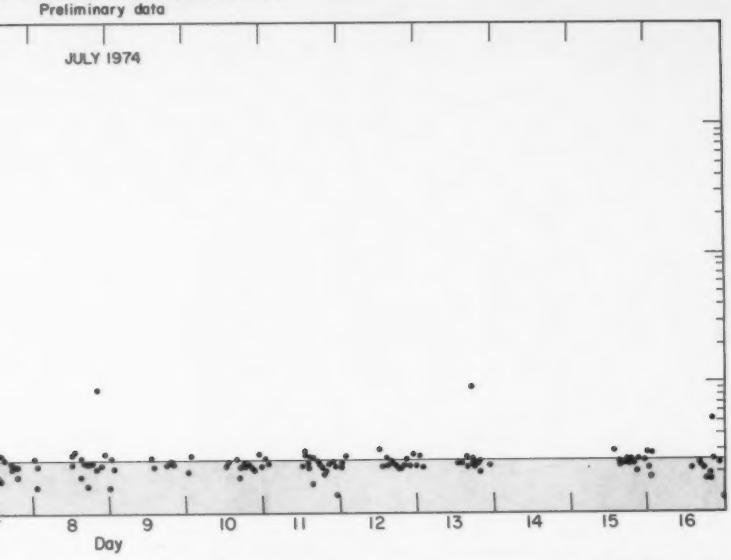


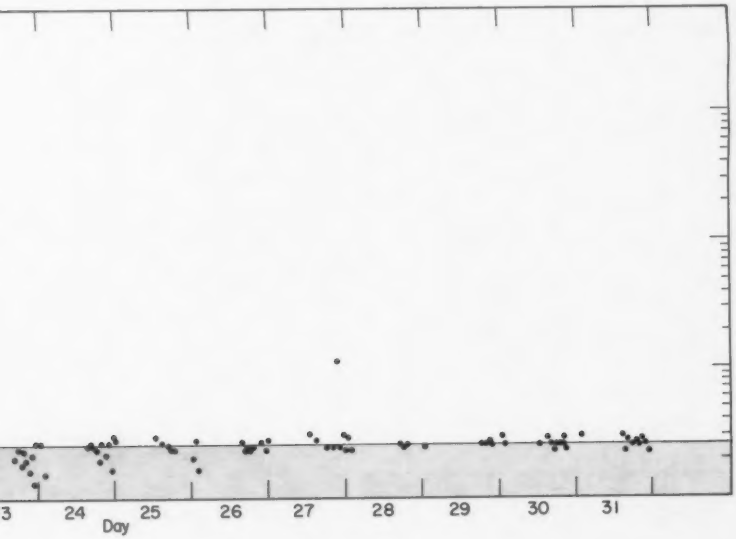


35
Jul 74


>60 Mev P
Particles cm^{-2} sec^{-1} ster^{-1}
10^2
10^1
10^0
10^{-1}
1
2
3
4
5
6
7
Particles cm^{-2} sec^{-1} ster^{-1}
10^2
10^1
10^0
10^{-1}
17
18
19
20
21
22
23

y Protons from NOAA 2 and 3
Preliminary data





SOLAR PROTON EVENTS (PROVISIONAL)

JULY 1974

03/1500 UT	NOAA2/NOAA3 proton detectors >10 Mev, >30 Mev, and >60 Mev at background.
03/1620	Thule 30 MHz riometer absorption began.
03/1800	NOAA2/NOAA3 >10 Mev detector indicated some proton enhancement.
03/2115	30 MHz riometer absorption reached 1 dB at Thule.
03/2300	First maximum in 30 MHz riometer absorption (1.8 dB at Thule).
04/0000	NOAA2/NOAA3 detectors: >10 Mev flux about 200 protons $cm^{-2}sec^{-1}ster^{-1}$. No significant enhancement on >30 and >60 Mev detectors.
05/0200	New absorption increase began on riometers.
05/1800	Maximum flux levels attained on NOAA2/NOAA3 detectors; about 300 protons $cm^{-2}sec^{-1}ster^{-1}$ on >10 Mev detector and about 20 protons $cm^{-2}sec^{-1}ster^{-1}$ on the >30 Mev detector. Slight enhancement at >60 Mev.
05/2100 and 05/2315	Maximum absorption of 4.6 dB attained on Thule 30 MHz riometer.
07/1500	NOAA2/NOAA3 >30 Mev detector at background.
07/2300	Thule 30 MHz riometer recovered to zero absorption.
08/0000	NOAA2/NOAA3 >10 Mev detector at background.

JUNE 1974 DATA

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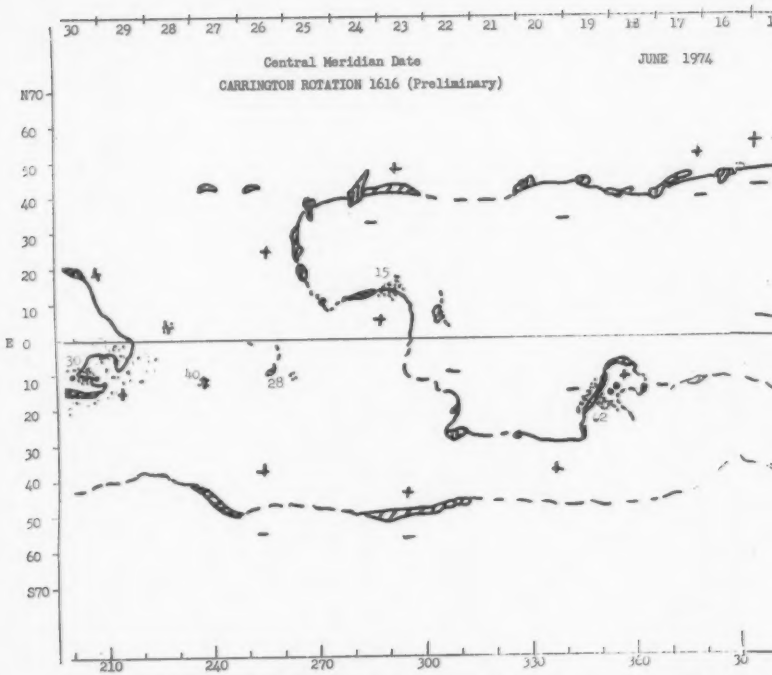
Errata: See pages 53 and 121

For explanations of the data contained herein see *Descriptive Text* published as supplement to February 1974 *Solar-Geophysical Data* (Number 354).

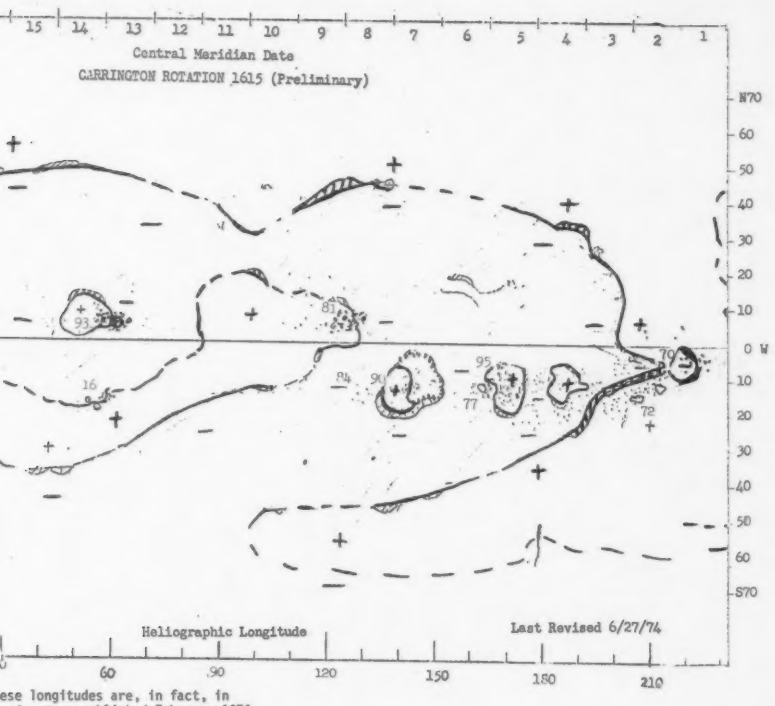
Hα SYNO



Errata: The longitudes on the synoptic charts have been labeled "Carrington longitude". These
the heliographic system. This change should also be noted on page 20 of the *Descriptiv*
including the reference to Lo, as shown on the pages of solar maps which follow.

NOPTIC CHART

JUNE 1974



ese longitudes are, in fact, in
ptive Text published February 1974

2.0 cm Spectroheliograms -- The 2.0 cm wavelength (15.3 GHz) solar radio maps are made at the La Posta Astrogeophysical Observatory of the Naval Electronics Laboratory Center, San Diego, Calif. (NELC La Posta). The program is funded in part by the AFCRL. The geographic coordinates of the observatory are: Long. 116° 26' 6".43 W, Lat. 32° 40' 39".33 N, Elevation 3896 ft. MSL.

The antenna used for the observations is a 60 ft. diameter circular paraboloid with a Cassegrain feed system, on a computer controlled altitude-azimuth mount. At the 2.0 cm wavelength the half power beam width of the antenna is approximately 4'.0 . The observations are made with a Dicke switched radiometer, the antenna being switched against a noise tube. The central disk quiet area solar antenna temperature is ~7000 K, with a measured rms noise ~2 K for a 1.0 second time constant.

The data for the maps are collected by automatically directing the telescope to perform a square boustrophedonic raster with lines perpendicular to heliographic north-south, filling a 19 by 19 grid of points spaced 2'.0 apart. The corners of the resulting 36' square grid are indicated on the maps. The universal time at which the map was begun is shown below the map; approximately 25 minutes are required to fill the grid. The quantity being contoured is antenna temperature; all contours are labelled in units of 100 K. The outside contour level is 3500 K. The next contour level will normally be 6000 K, with successive contour levels equally spaced. The contour interval is occasionally changed to provide a cleaner map. The interval can be determined by comparing consecutive contour levels, excepting of course, the outside one.

On days for which no map is presented the words NO DATA appear near the center of the grid. Below this appears a one word indicator of why no map has been provided. These words have the following specific meanings.

CLOUDY -- A map was made for the day beginning at the time shown; however, the map was so seriously effected by clouds that it was deemed unwise to publish it. Such maps will be provided to individual researchers upon request.

WEATHER -- The weather at the observatory was so inclement that no observations were made. No start time is given in the format.

CALIBRATION -- A map was made for the day beginning at the time shown; however, the operation of the equipment was such that the correctness of the antenna temperatures is in doubt. Such maps will be provided to individual researchers upon request.

EQUIPMENT -- The situation and condition of the equipment were such that no map was made. This includes such causes as receiver malfunction, mechanical and computer problems, and preventative maintenance. No start time is given in the format.

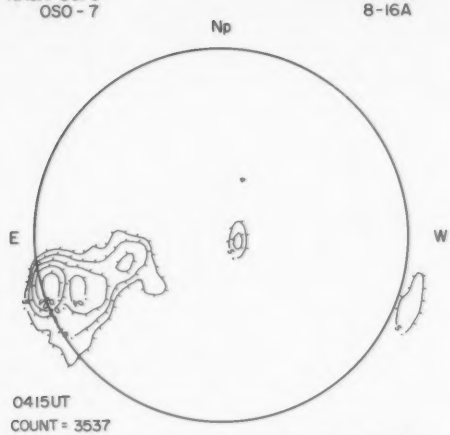
Further information and requests for data should be addressed to Max P. Bleiweiss, NELC La Posta, Rt. 1 Box 591, Campo, Calif. 92006.

JUNE 1, 1974 (P=-15

NASA GSFC
OSO - 7

X-RAY
8-16A

McMATH-HULB



0415UT
COUNT = 3537
ROLL = 100.7°
P-TH = -7.22

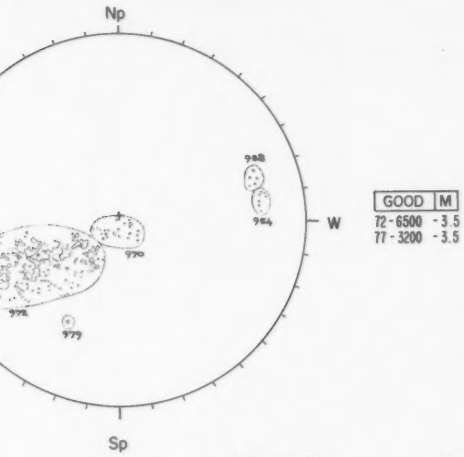
Counts per 0.125 sec.

1400UT

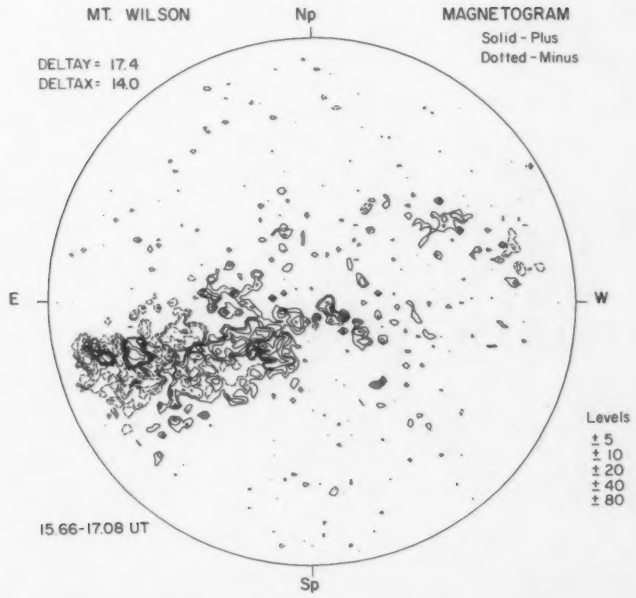
Note: The Prospect Hill Observatory has ceased operation on 8.6 mm. A replacement map at this frequency is expected.

-15.60, B_o =-0.66, L_o =232.07)

HULBERT CALCIUM REPORT



GOOD	M
72-6500	-3.5
77-3200	-3.5



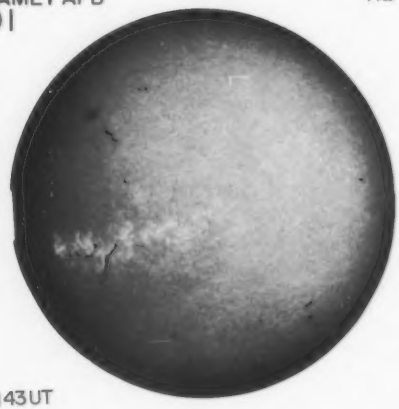
RAMEY AFB
OI

Np

Hα

E

W



1143UT

Sp

BOULDER

Np

E

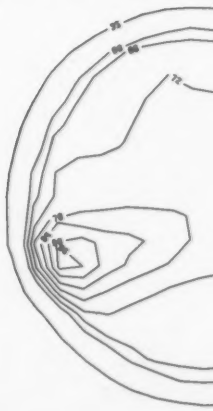
NO DATA

Sp

NELC LA POSTA

Np

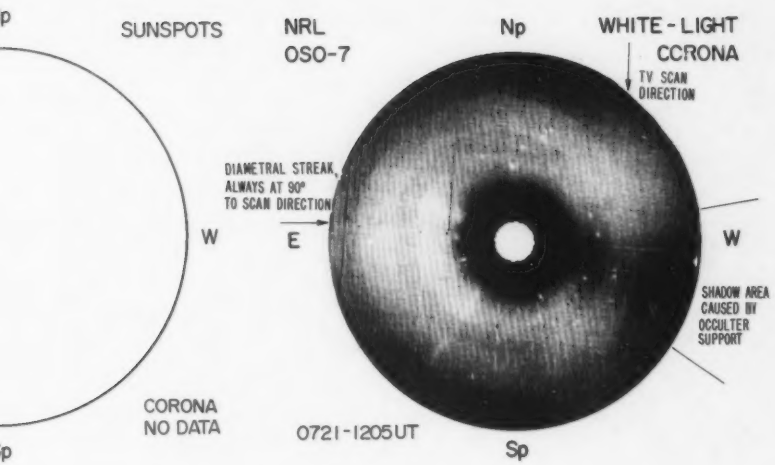
E



L

1814UT

Sp


p
SUNSPOTS
NRL
OSO-7
Np
WHITE - LIGHT
CORONA
TV SCAN
DIRECTION
DIAMETRAL STREAK,
ALWAYS AT 90°
TO SCAN DIRECTION
W
E
W
SHADOW AREA
CAUSED BY
OCCULTER
SUPPORT
CORONA
NO DATA
0721-1205UT
Sp
p

Np
2.0 CM
W
Sp
ANT. TEMP. UNIT 100° K

JUNE 2, 1974 (P=-15

NASA GSFC
OSO - 7

X-RAY
8-16A

McMATH-HUL

Np

E

NO DATA

W

E

1115UT

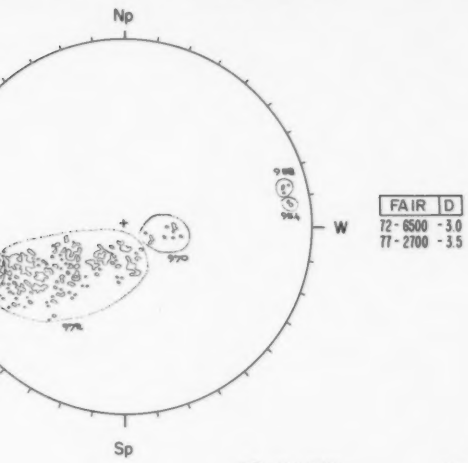
COUNT =
ROLL =
P-TH =

Sp

Counts per 0.125 sec.

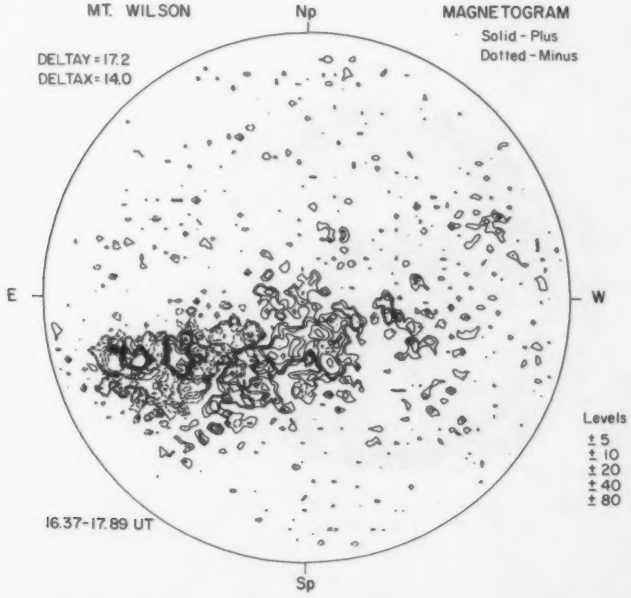
-15.23, B_o=-0.54, L_o=218.84)

HULBERT CALCIUM REPORT



FAIR	D
72 - 6500	- 3.0
77 - 2700	- 3.5

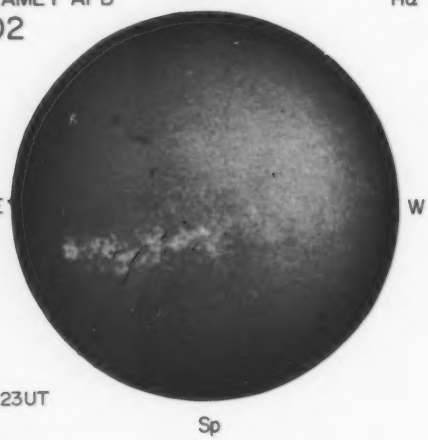
MT. WILSON



MAGNETOGRAM
Solid - Plus
Dotted - Minus

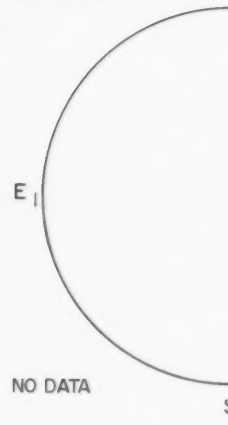
Levels
± 5
± 10
± 20
± 40
± 80

RAMEY AFB
02



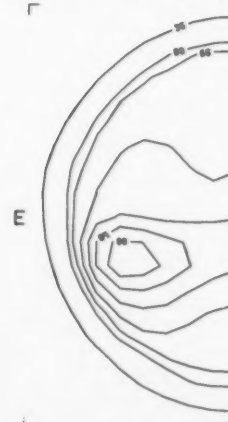
1123UT

BOULDER



NO DATA

NELC LA POSTA



2051 UT

Np

SUNSPOTS

W

CORONA
NORIKURA

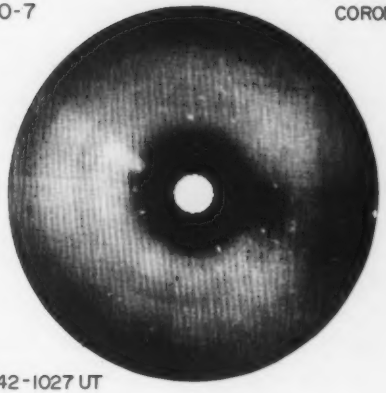
Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E



W

0542-1027 UT

Sp

Np

2.0 CM

W

Sp

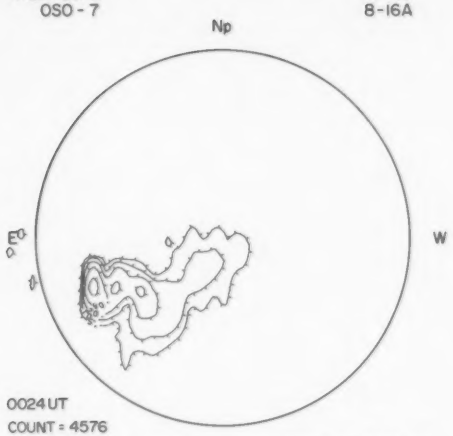
ANT. TEMP. UNIT 100° K

45
Jun 74

JUNE 3, 1974 (P=-14.8

NASA GSFC
OSO - 7

X-RAY
8-16A



0024 UT
COUNT = 4576
ROLL = 99.9°
P-TH = -7.24

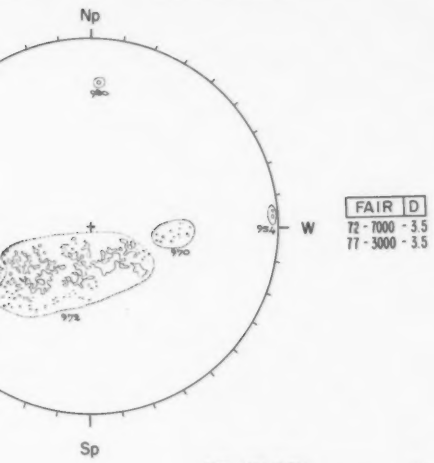
Counts per 0.125 sec.

McMATH-HULBER

1115 UT

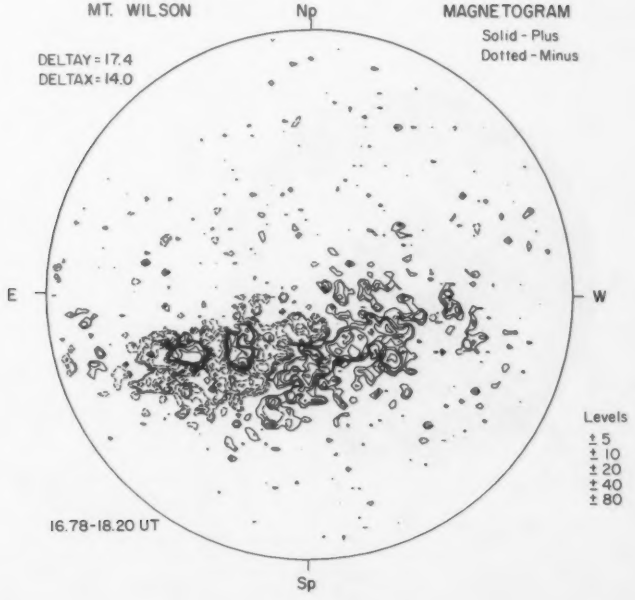
14.85, B_o=-0.42, L_o=205.60)

BERT CALCIUM REPORT



FAIR | D
72 - 7000 - 3.5
77 - 3000 - 3.5

MT. WILSON



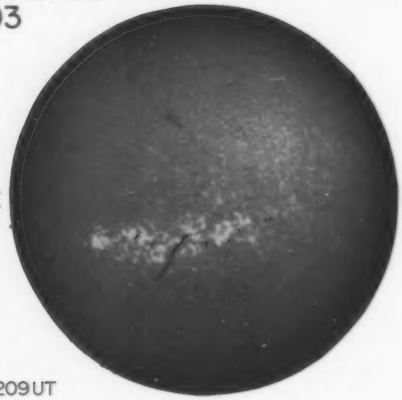
MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

RAMEY AFB
03

Np

Hα



E

W

1209 UT

Sp

BOULDER

E

NO DATA

NELC LA POSTA

E

1814 UT

Np

SUNSPOTS

W

CORONA
LOMNICKY-ST IT

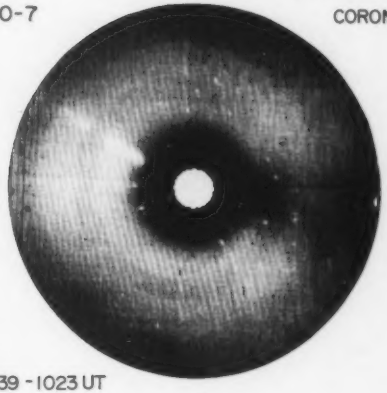
Sp

NRL
OSO-7

Np

WHITE - LIGHT
CORONA

E



W

0539 - 1023 UT

Sp

2.0 CM

Np

72

78

W

Sp

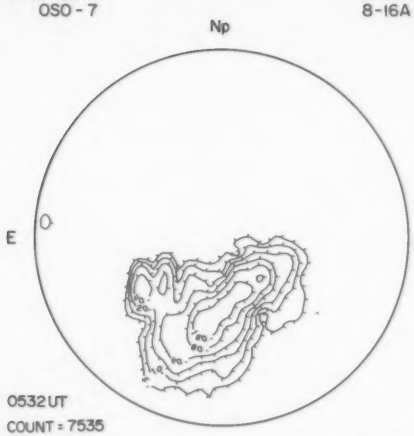
ANT. TEMP. UNIT 100° K

47
Jun 74

JUNE 4, 1974 (P=-14

NASA GSFC
OSO-7

X-RAY
8-16A



0532 UT
COUNT = 7535
ROLL = 98.6°
P-TH = -7.24

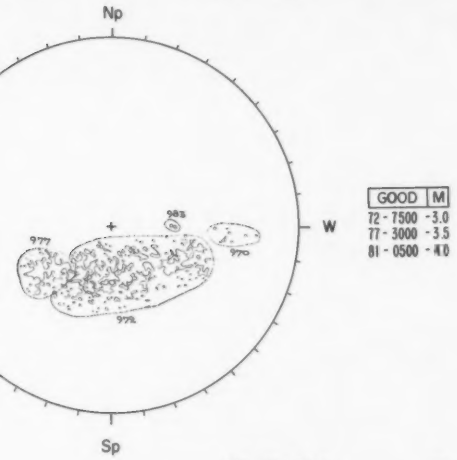
Counts per 0.125 sec.

McMATH-HULB

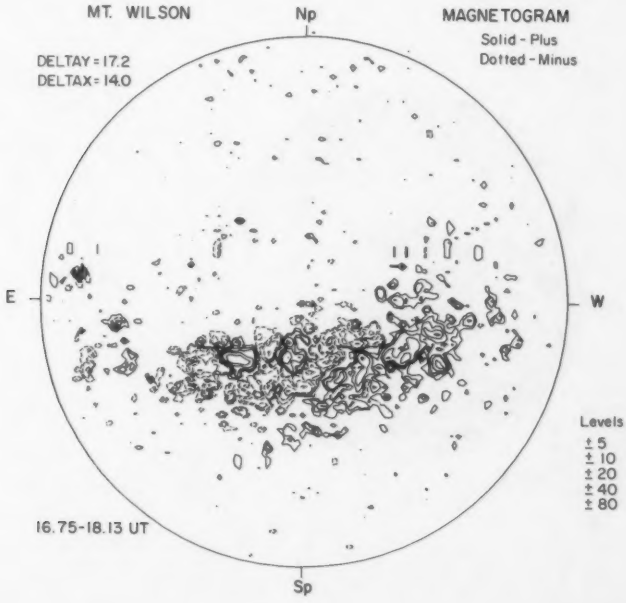
1300 UT

=-14.46, B_o=-0.30, L_o = 192.37)

ULBERT CALCIUM REPORT



GOOD	M
72 - 7500	-3.0
77 - 3000	-3.5
81 - 0500	-4.0



RAMEY AFB

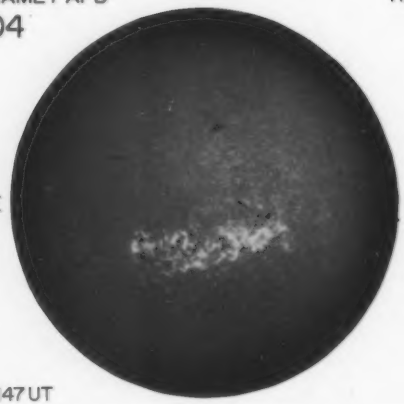
04

Np

Hα

E

W



1147 UT

Sp

BOULDER

E

NO DATA

NELC LA POSTA

E

1753 UT

Np

SUNSPOTS

W

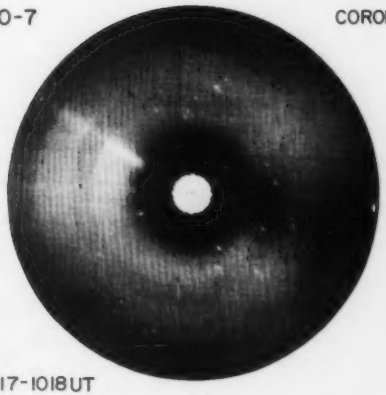
CORONA
KISLOVODSK

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

W

0017-1018 UT

Sp

2.0 CM

Np

W

Sp

ANT. TEMP. UNIT 100° K

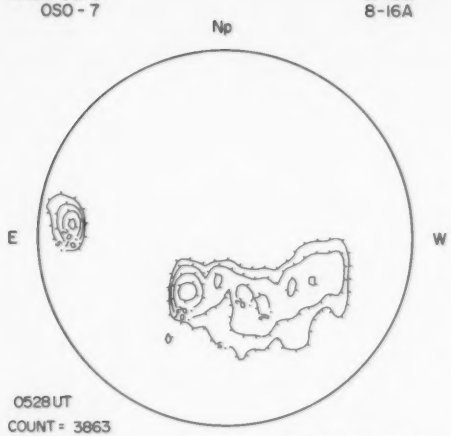
46
Jun 74

JUNE 5, 1974 (P=-14.

NASA GSFC
OSO - 7

X-RAY
8-16A

McMATH-HULBE



0528 UT
COUNT = 3863
ROLL = 98.5°
P-TH = -7.25

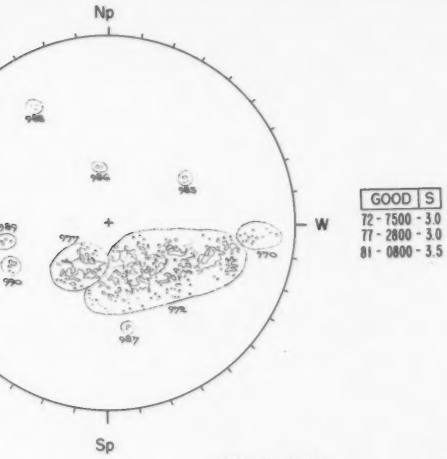
Counts per 0.125 sec.

1245 UT

14.08, B_o = -0.18, L_o = 179.13)

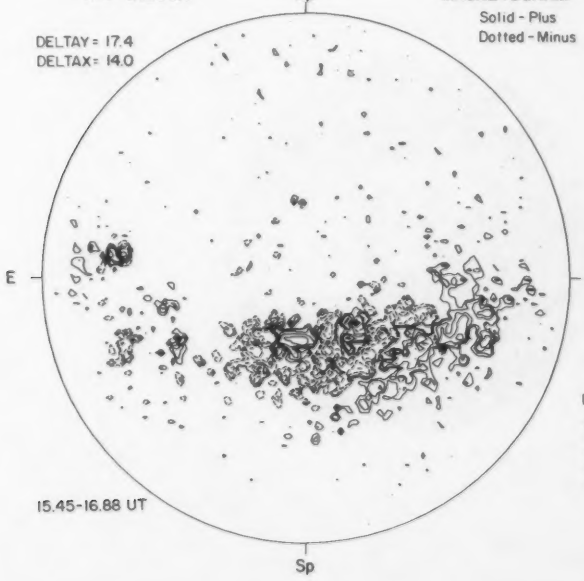
50
Jun 74

ULBERT CALCIUM REPORT



GOOD	S
72 - 7500	3.0
77 - 2800	3.0
81 - 0800	3.5

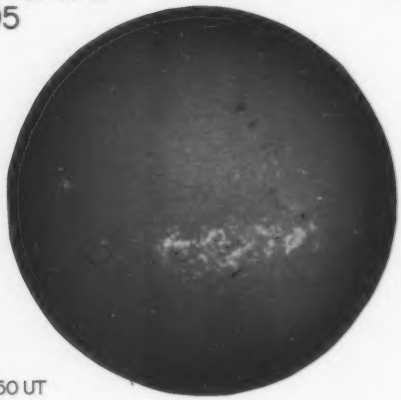
MT. WILSON



RAMEY AFB
05

Np

Hα



E

W

1150 UT

Sp

BOULDER

N

E

NO DATA

S

NELC LA POSTA

N

NO D

E

CLOU

2004 UT

Sp

Np

SUNSPOTS

W

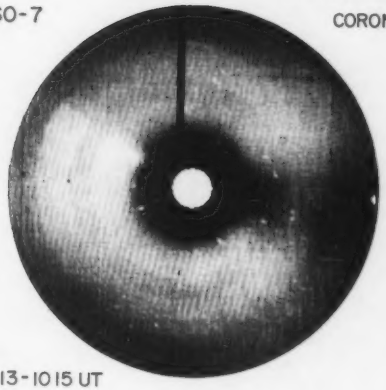
CORONA
LOMNICKY-ST IT

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

W

0013-1015 UT

Sp

Np

2.0 CM

IO DATA

CLOUDY

W

Sp

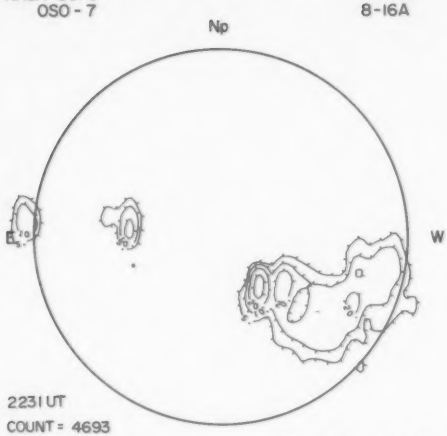
ANT. TEMP. UNIT 100° K

51
Jun 74

JUNE 6, 1974 (P=-13

NASA GSFC
OSO-7

X-RAY
8-16A



2231 UT
COUNT = 4693
ROLL = 101.9°
P-TH = -7.25

Counts per 0.125 sec.

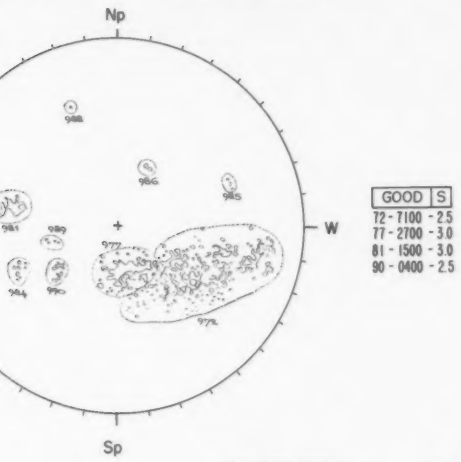
McMATH-HULB

1240 UT

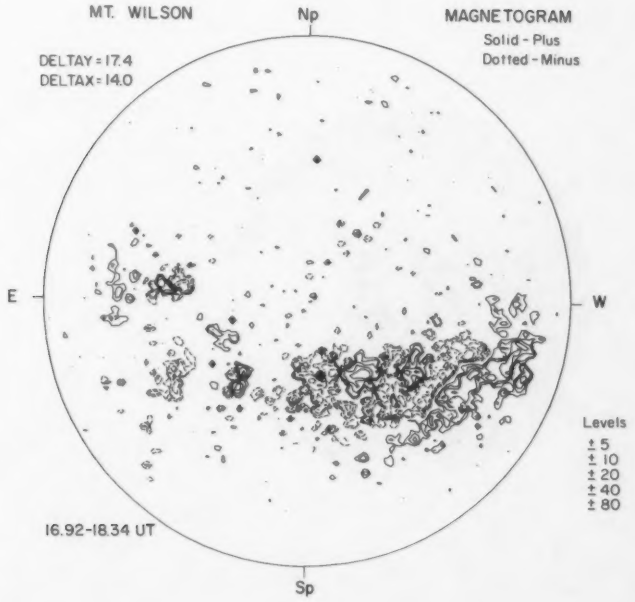
=-13.68, B_o=-0.06, L_o=165.90)

52
Jun 74

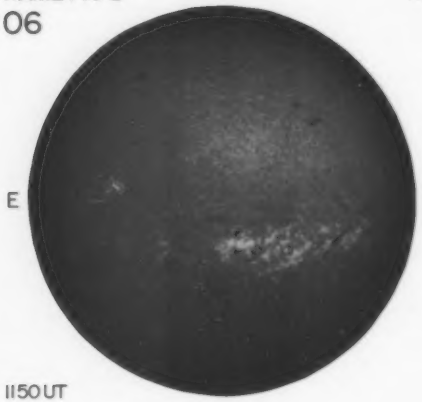
HULBERT CALCIUM REPORT



MT. WILSON MAGNETOGRAM



RAMEY AFB
06



1150 UT

BOULDER

NO DATA

NELC LA POSTA

1605 UT

Np

SUNSPOTS

NRL
OSO-7

CORONA
NO DATA

Sp

Np

WHITE-LIGHT
CORONA

Sp

Note: These are the last images received from the white-light coronagraph before reentry of the OSO-7 spacecraft.

Errata: An error was made in mounting the May 1974 white-light coronagrams in *Solar-Geophysical Data* Part I, July 1974. The one on page 43 for May 21 was correctly mounted. The ones on the pages following had the Sp in the position of the Np and, thus, E & W were also reversed.

2.0 CM

Np

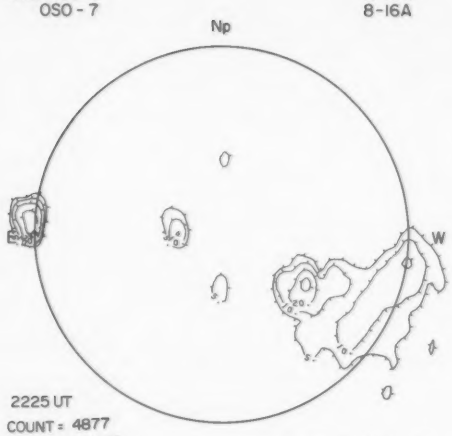
Sp

ANT. TEMP. UNIT 100°K

JUNE 7, 1974 (P=-13

NASA GSFC
OSO - 7

X-RAY
8-16A



2225 UT
COUNT = 4877
ROLL = 104.7°
P-TH = -7.25

Counts per 0.125 sec.

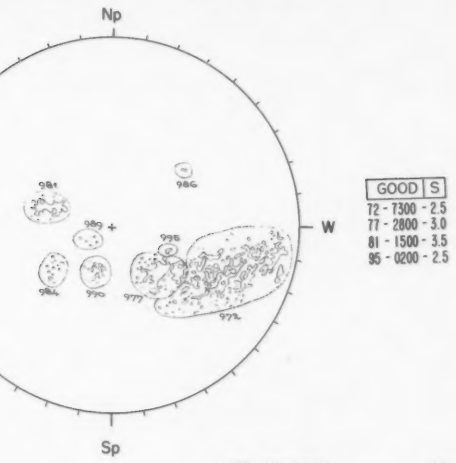
McMATH-HULB

1230 UT

-13.29, B_o=0.06, L_o = 152.66)

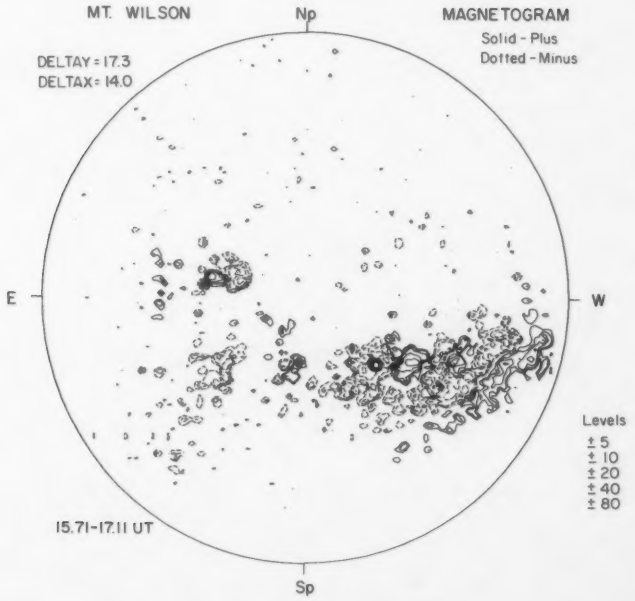
54
Jun 74

ULBERT CALCIUM REPORT



GOOD	S
72 - 7300	2.5
77 - 2800	3.0
81 - 1500	3.5
95 - 0200	2.5

MT. WILSON



MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

RAMEY AFB
07

Np

Hα

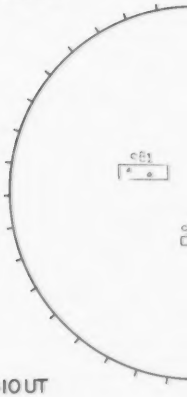
E

W

1414 UT

Sp

BOULDER



E

1410 UT

NELC LA POSTA

E

1925 UT

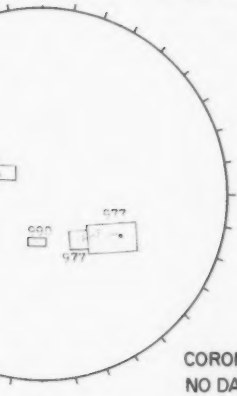
Np

SUNSPOTS

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



NO DATA

Np

2.0 CM

NO DATA

CLOUDY

W

Sp

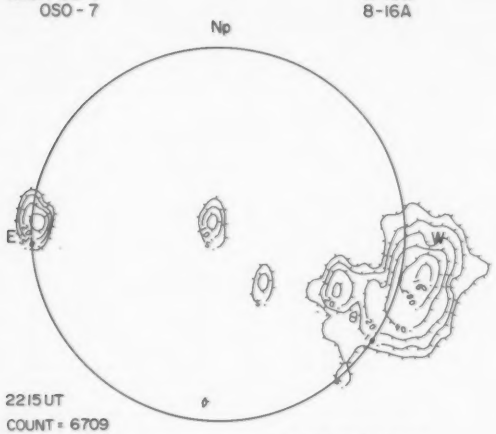
ANT. TEMP. UNIT 100°K

55
Jun 74

JUNE 8, 1974 (P=-12

NASA GSFC
OSO-7

X-RAY
8-16A



2215 UT
COUNT = 6709
ROLL = 1078°
P-TH = -7.24

Counts per 0.125 sec.

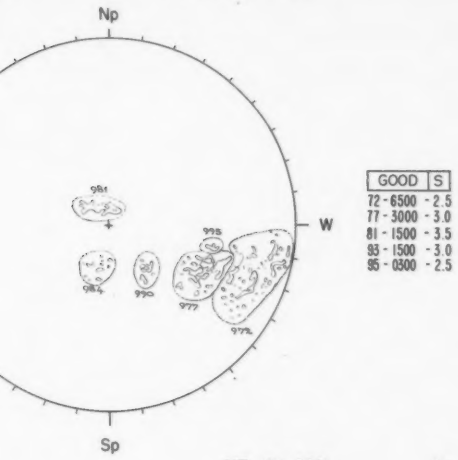
McMATH-HULB

1800 UT

-12.89, B_o = 0.18, L_o = 139.43)

56
Jun 74

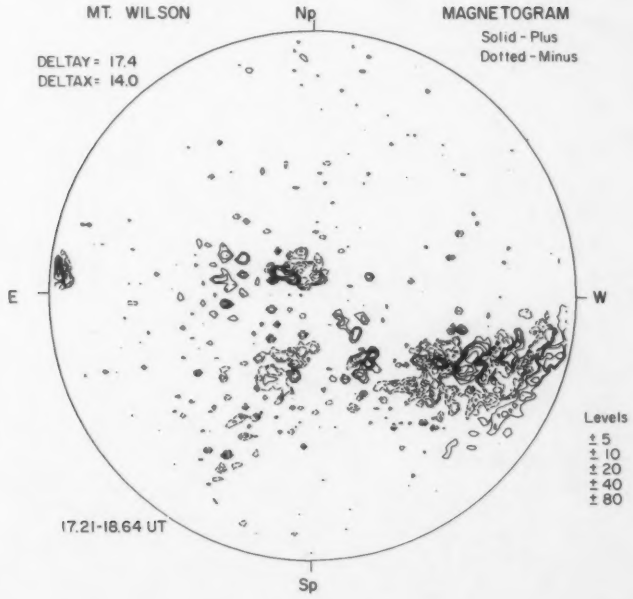
ULBERT CALCIUM REPORT



GOOD	S
72 - 6500	- 2.5
77 - 3000	- 3.0
81 - 1500	- 3.5
93 - 1500	- 3.0
95 - 0300	- 2.5

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

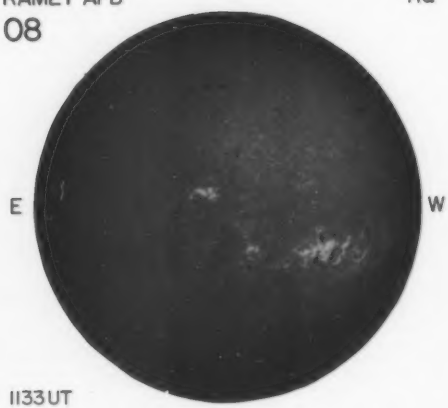


MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

17.21-18.64 UT

RAMEY AFB
08



1133 UT

BOULDER

NO DATA

NELC LA POSTA

1758 UT

Np

SUNSPOTS

NRL
OSO-7

CORONA
KISLOVODSK

Sp

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

Np

2.0 CM

Sp

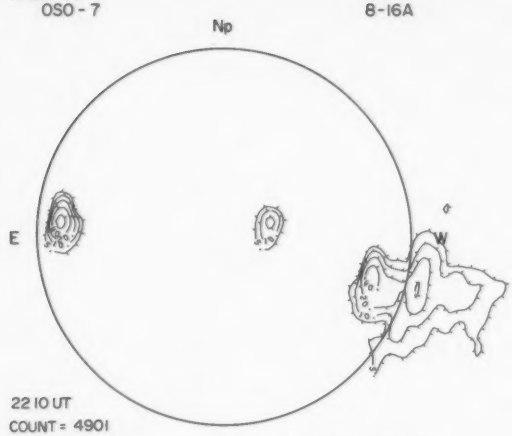
ANT. TEMP. UNIT 100° K

57
Jun 74

JUNE 9, 1974 (P=-

NASA GSFC
OSO - 7

X-RAY
8-16A



22 10 UT
COUNT = 4901
ROLL = 109.9°
P-TH = -7.24

Counts per 0.125 sec.

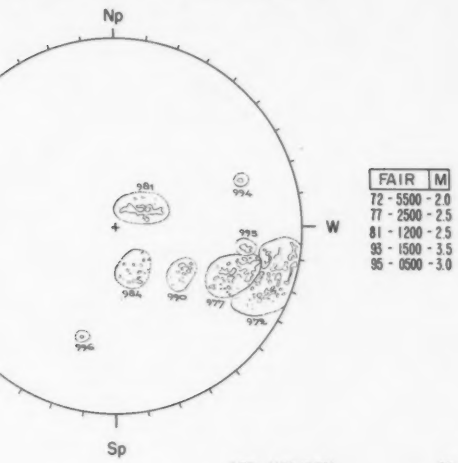
McMATH-HULB

1250 UT

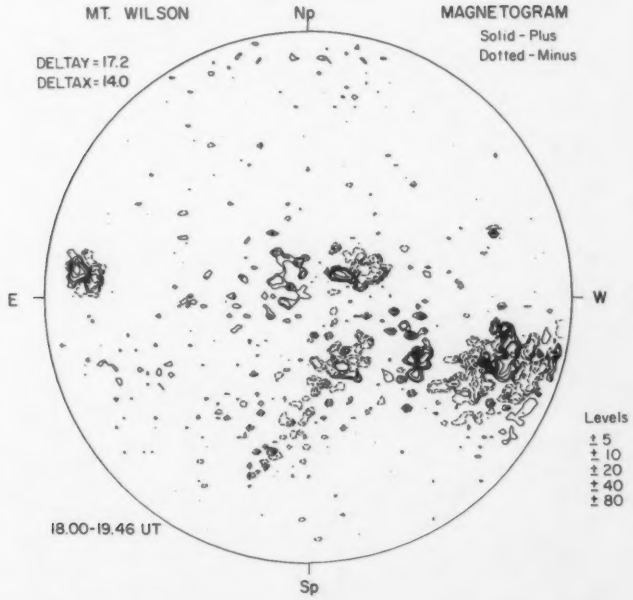
=-12.48, B_o=0.30, L_o=126.19)

58
Jun 74

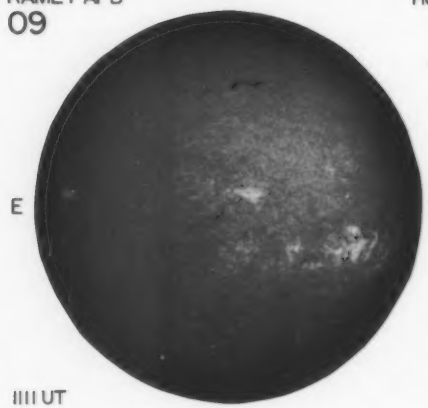
ULBERT CALCIUM REPORT



FAIR	M
72 - 5500	- 2.0
77 - 2500	- 2.5
81 - 1200	- 2.5
93 - 1500	- 3.5
95 - 0500	- 3.0



RAMEY AFB
09



1111 UT

BOULDER

1440 UT

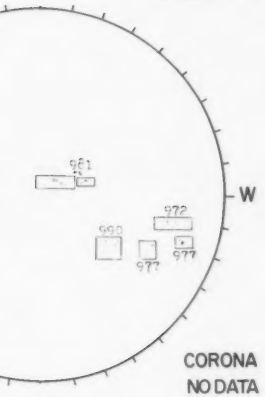
NELC LA POSTA

1844 UT

Np

SUNSPOTS

NRL
OSO-7



CORONA
NO DATA

Sp

Np

WHITE-LIGHT
CORONA

E

NO DATA

W

Sp

2.0 CM

Np

Sp

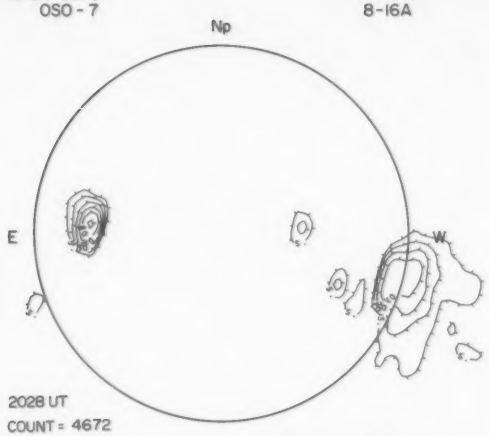
ANT. TEMP. UNIT 100° K

59
Jun 74

JUNE 10, 1974 (P=-12

NASA GSFC
OSO - 7

X-RAY
8-16A



2028 UT
COUNT = 4672
ROLL = 111.5°
P-TH = -7.23

Counts per 0.125 sec.

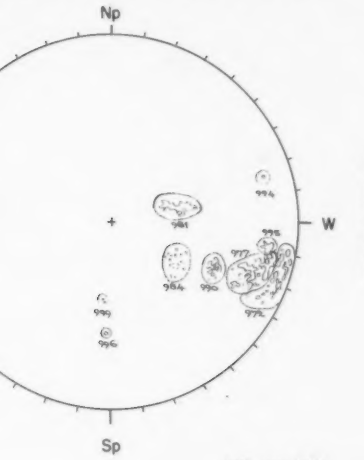
McMATH-HULB

1235 UT

-12.07, B_o=0.42, L_o=112.95)

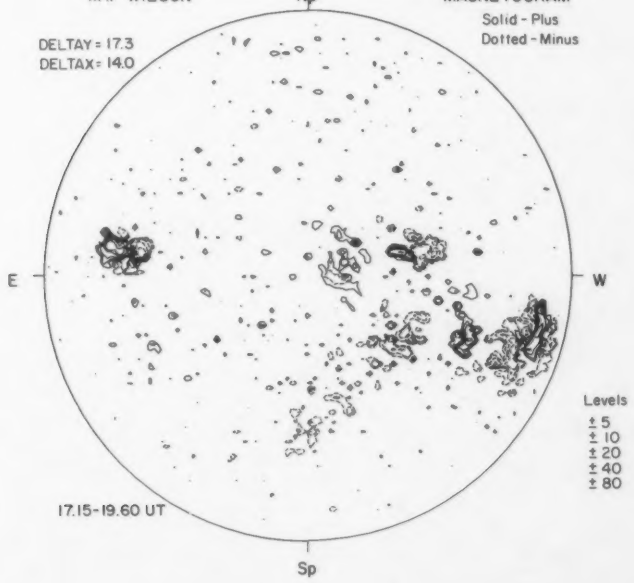
60
Jun 74

ULBERT CALCIUM REPORT



FAIR	M
72 - 3500	- 2.0
77 - 2700	- 3.0
81 - 1100	- 3.0
90 - 0600	- 2.5
93 - 2300	- 3.5
95 - 0900	- 3.0

MT. WILSON



MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

RAMEY AFB

10

Np

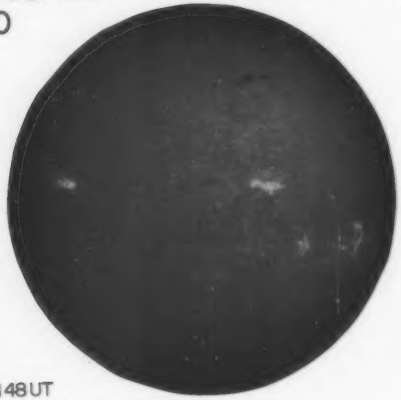
Hα

E

W

1148 UT

Sp



BOULDER

N

E

NO DATA

S

NELC LA POSTA

N

E

L

2011 UT

Np

SUNSPOTS

NRL

OSO-7

Np

WHITE-LIGHT CORONA

E

NO DATA

W

CORONA

KISLOVODSK

Sp

Sp

Np

2.0 CM

W

Sp

ANT. TEMP. UNIT 100°K

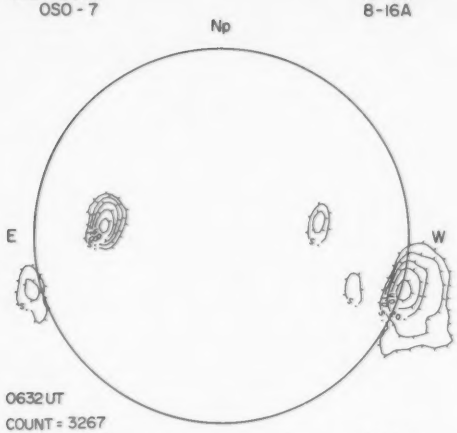
61

Jun 74

JUNE 11, 1974 (P=-1

NASA GSFC
OSO - 7

X-RAY
8-16A



0632 UT
COUNT = 3267
ROLL = 112.3°
P-TH = -7.22

Counts per 0.125 sec.

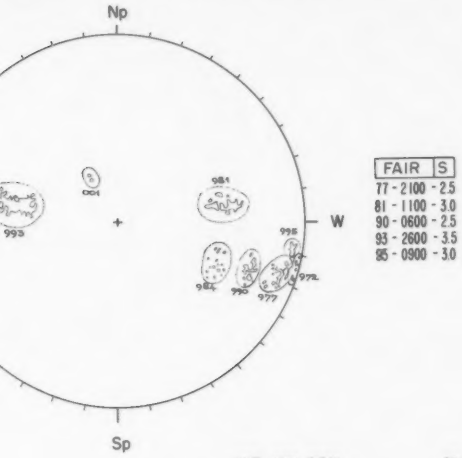
McMATH-HUL

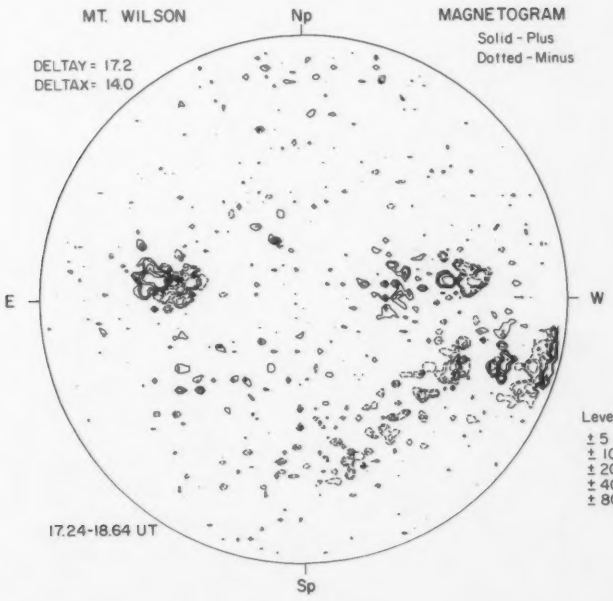
1200 UT

=-11.66, B_o=0.54, L_o=99.72)

62
Jun 74

HULBERT CALCIUM REPORT

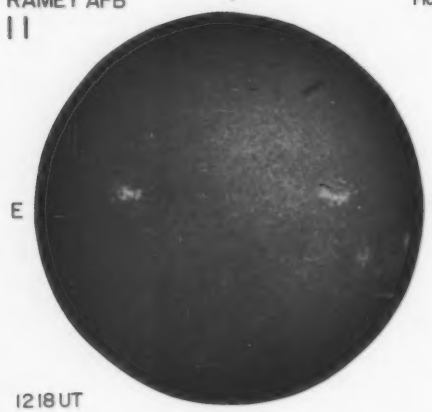




RAMEY AFB

Np

Hα



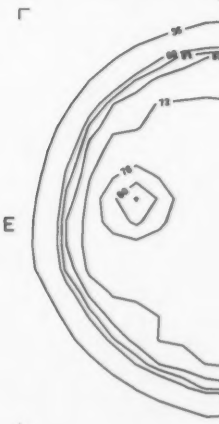
1218 UT

Sp

BOULDER

1305 UT

NELC LA POSTA



1913 UT

Np

SUNSPOTS

Sp

NRL
OSO-7

E

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

CORONA
KISLOVODSK

2.0 CM

Np

Sp

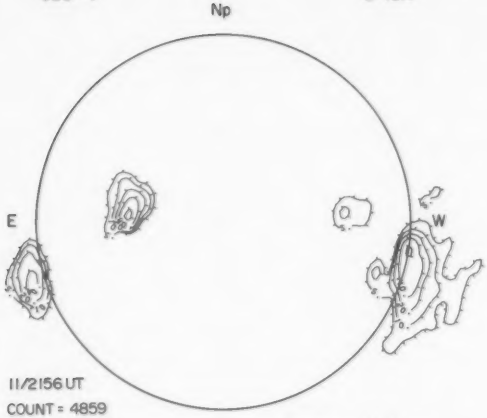
ANT. TEMP. UNIT 100° K

63
Jun 74

JUNE 12, 1974 (P=-11

NASA GSFC
OSO-7

X-RAY
8-16A



11/2156 UT
COUNT = 4859
ROLL = 113.5°
P-TH = -7.22

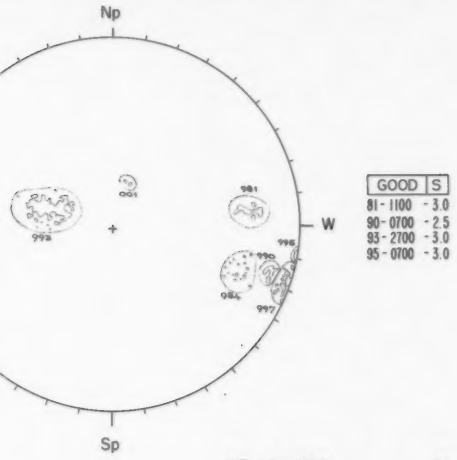
Counts per 0.125 sec.

McMATH-HULB

1155 UT

-11.24, $B_o = 0.66$, $L_o = 86.48$)

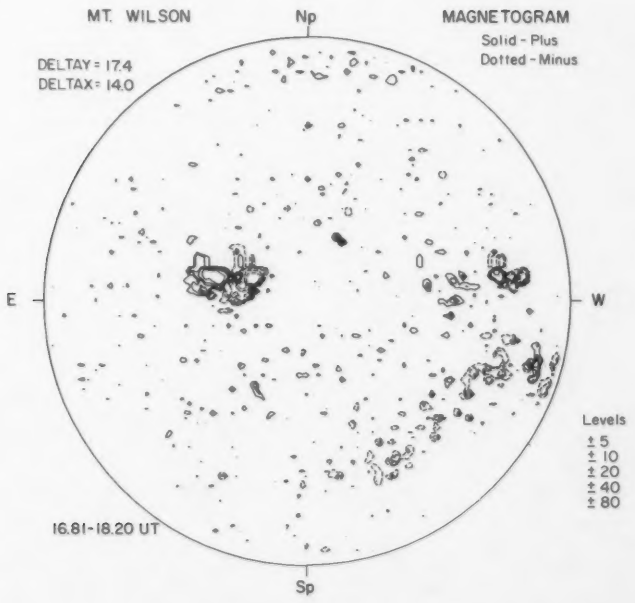
ULBERT CALCIUM REPORT



GOOD	S
81 - 1100	- 3.0
90 - 0700	- 2.5
93 - 2700	- 3.0
95 - 0700	- 3.0

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0



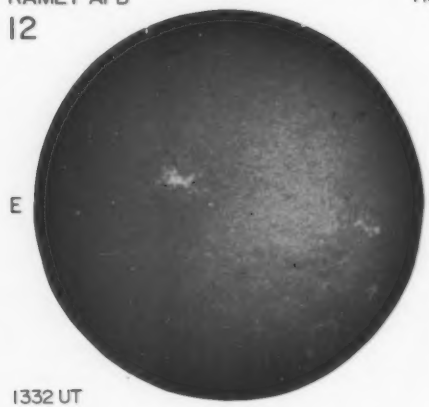
MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

16.81-18.20 UT

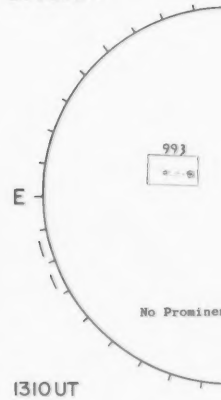
RAMEY AFB

12



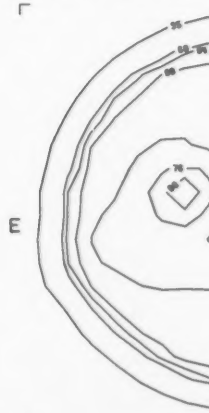
1332 UT

BOULDER



1310 UT

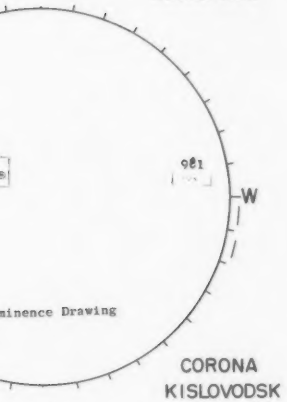
NELC LA POSTA



2026 UT

Np

SUNSPOTS



CORONA
KISLOVODSK

Sp

NRL
OSO-7

E

W

Np

WHITE-LIGHT
CORONA

NO DATA

Sp

Np

2.0 CM

Sp

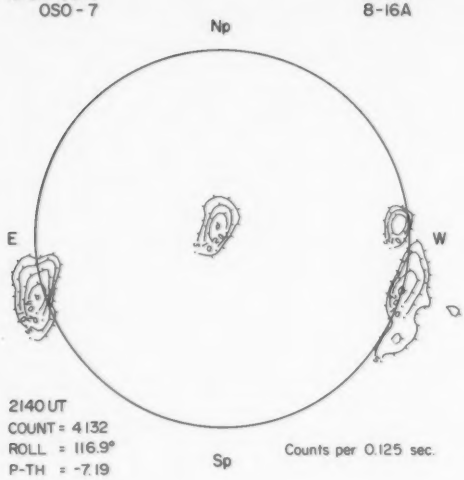
ANT. TEMP. UNIT 100° K

65
Jun 74

JUNE 13, 1974 (P=-10

NASA GSFC
OSO-7

X-RAY
8-16A



2140 UT
COUNT = 4132
ROLL = 116.9°
P-TH = -7.19

Counts per 0.125 sec.

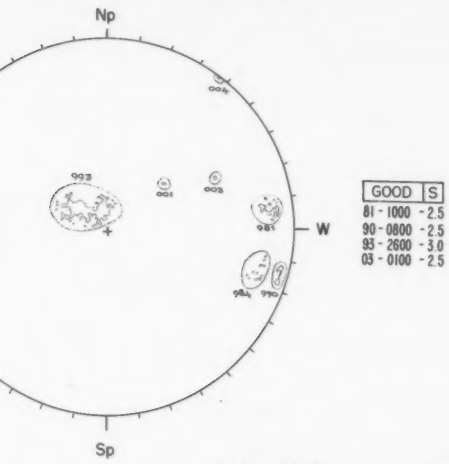
McMATH-HULBE

1200UT

-10.82, $B_o = 0.78$, $L_o = 73.25$)

66
Jun 74

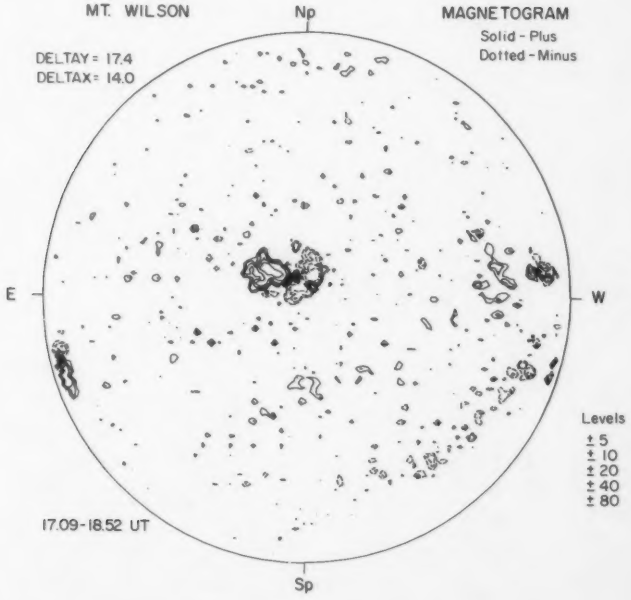
ULBERT CALCIUM REPORT



GOOD	S
81 - 1000	- 2.5
90 - 0800	- 2.5
93 - 2600	- 3.0
03 - 0100	- 2.5

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

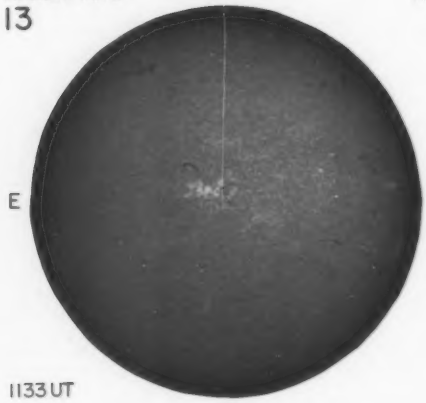


MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

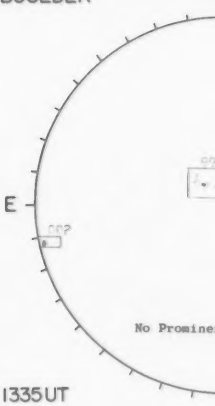
17.09-18.52 UT

RAMEY AFB
13



1133 UT

BOULDER



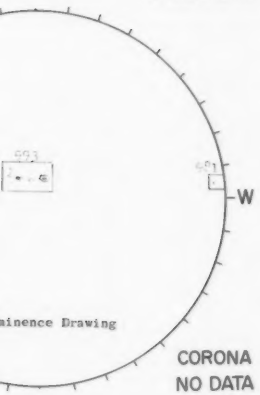
1335 UT

NELC LA POSTA

1929 UT

Np

SUNSPOTS



CORONA
NO DATA

Sp

NRL
OSO-7

E

Np

WHITE-LIGHT
CORONA

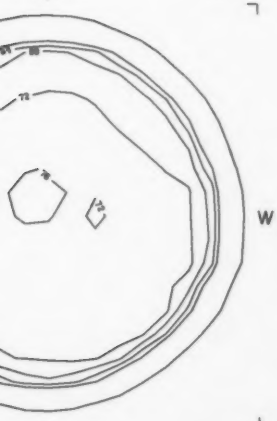
NO DATA

W

Sp

2.0 CM

Np



Sp

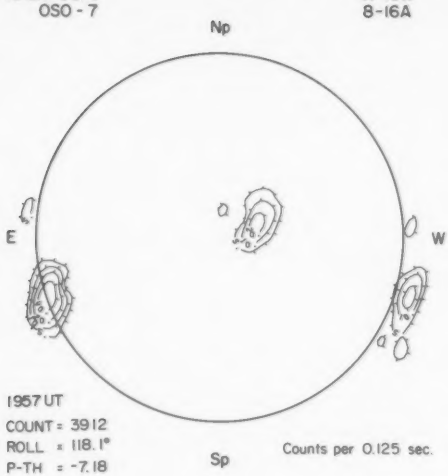
ANT. TEMP. UNIT 100° K

67
Jun 74

JUNE 14, 1974 (P=-

NASA GSFC
OSO - 7

X-RAY
8-16A



1957 UT
COUNT = 3912
ROLL = 118.1°
P-TH = -7.18

Counts per 0.125 sec.

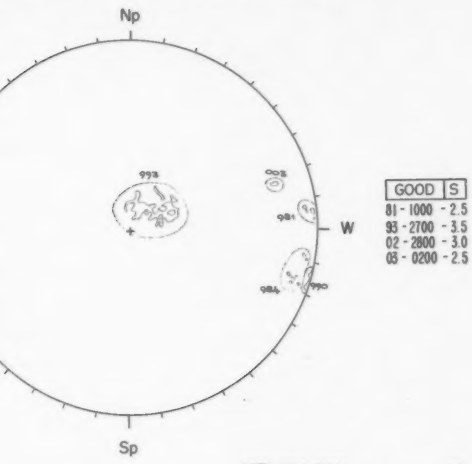
McMATH-HUL

1245 UT

P=-10.40, B_o=0.90, L_o=60.01)

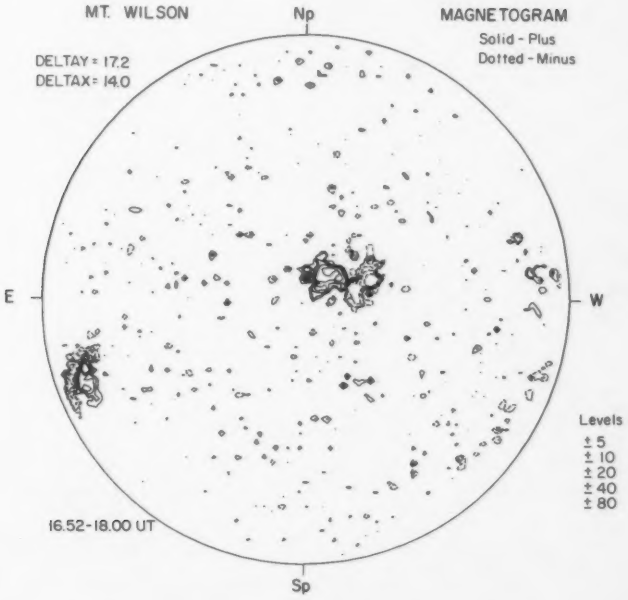
68
Jun 74

-HULBERT CALCIUM REPORT

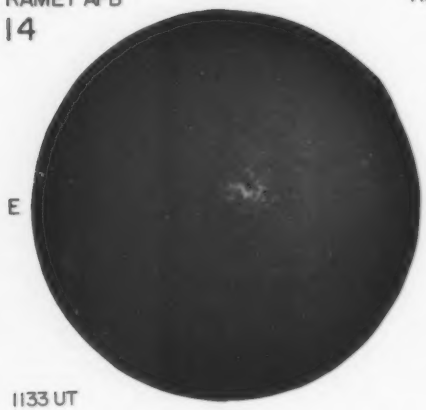


GOOD	S
81 - 1000	- 2.5
93 - 2700	- 3.5
02 - 2800	- 3.0
03 - 0200	- 2.5

MT. WILSON



RAMEY AFB
14



1133 UT

BOULDER

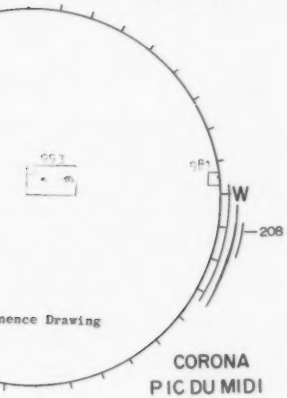
1355 UT

NELC LA POSTA

1805 UT

Np

SUNSPOTS



Sp

NRL
OSO-7

E

CORONA
PIC DU MIDI

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

2.0CM

Np

Sp

ANT. TEMP. UNIT 100°K

69
Jun 74

JUNE 15, 1974 (P=-9

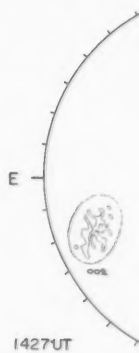
NASA GSFC
OSO - 7

X-RAY
8-16A

1813 UT
COUNT = 3713
ROLL = 119.1°
P-TH = -7.16

Counts per 0.125 sec.

McMATH-HUL

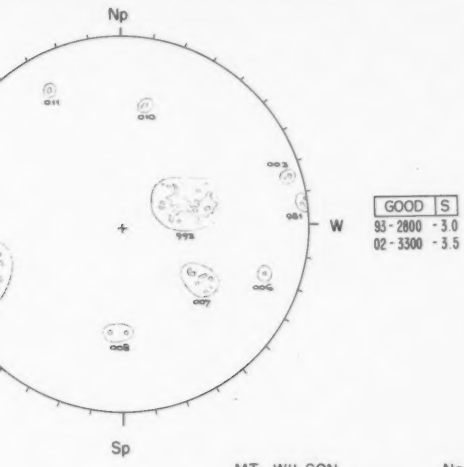


1427 UT

-9.98, $B_o = 1.02$, $L_o = 46.77$)

70
Jun 74

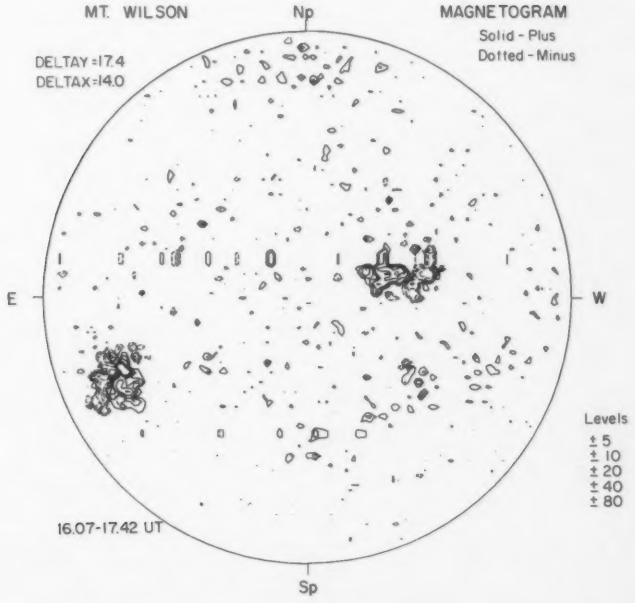
HULBERT CALCIUM REPORT



GOOD	S
93 - 2800	- 3.0
02 - 3300	- 3.5

MT. WILSON MAGNETOGRAM

DELTAY = 17.4
DELTAX = 14.0



Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

16.07-17.42 UT

RAMEY AFB

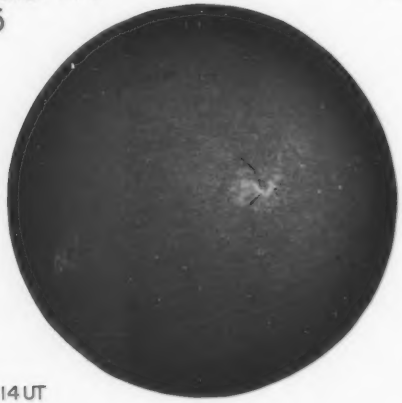
15

Np

Hα

E

W



1114 UT

Sp

BOULDER

E

002

No Promine

1448 UT

NELC LA POSTA

E

1752 UT

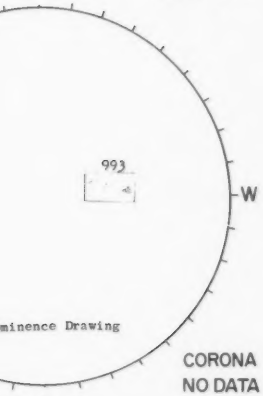
Np

SUNSPOTS

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

NO DATA

W

CORONA
NO DATA

Sp

Sp

2.0 CM

Np

Sp

ANT. TEMP. UNIT 100°K

71
Jun 74

JUNE 16, 1974 (P=-9

NASA GSFC
OSO-7

X-RAY
8-16A

1629 UT
COUNT = 3008
ROLL = 119.9°
P-TH = -7.14

Counts per 0.125 sec.

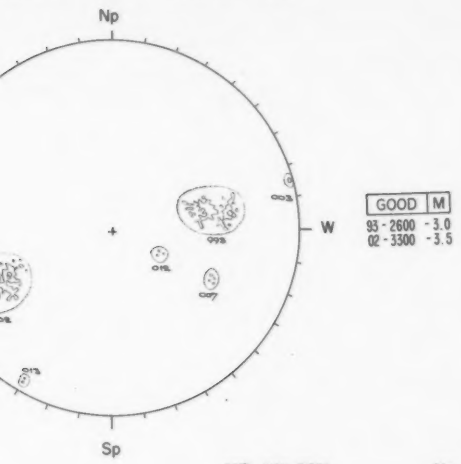
McMATH-HULB

1300 UT

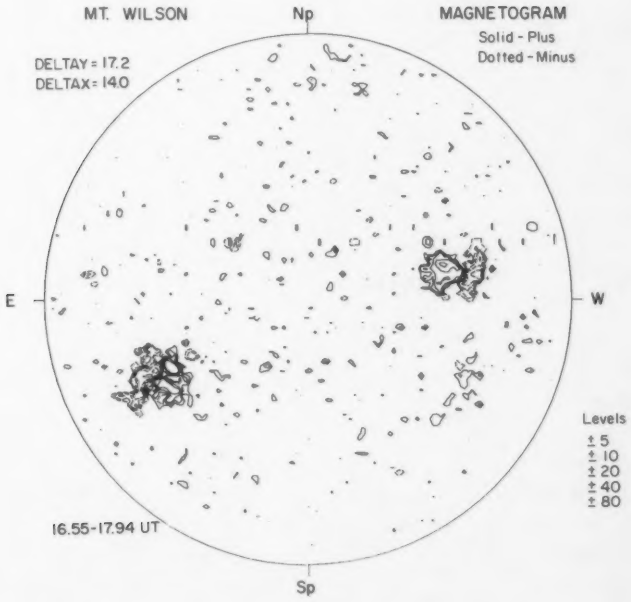
-9.55, B_o = 1.14, L_o = 33.54)

72
Jun 74

ULBERT CALCIUM REPORT

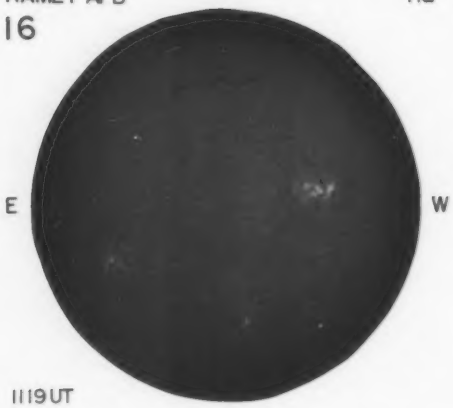


GOOD	M
93 - 2600	- 3.0
02 - 3300	- 3.5



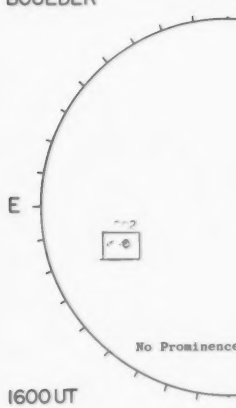
RAMEY AFB

16



1119 UT

BOULDER



1600 UT

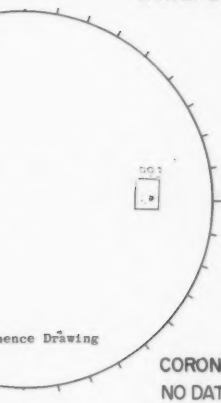
NELC LA POSTA

2024 UT

Np

SUNSPOTS

NRL
OSO-7



ence Drawing

CORONA
NO DATA

Sp

Np

WHITE-LIGHT
CORONA

E

NO DATA

W

Sp

Np

2.0 CM

Sp

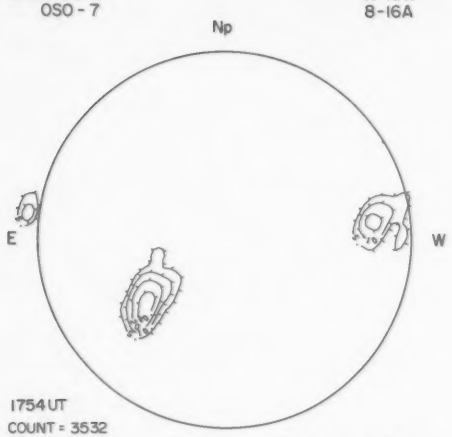
ANT. TEMP. UNIT 100° K

73
Jun 74

JUNE 17, 1974 (P=-9

NASA GSFC
OSO-7

X-RAY
8-16A



1754 UT
COUNT = 3532
ROLL = 120.7°
P-TH = -7.12

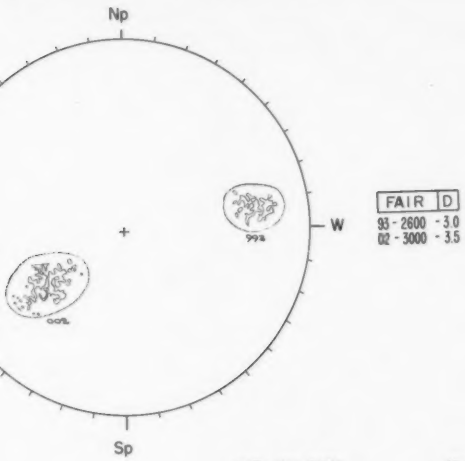
Counts per 0.125 sec.

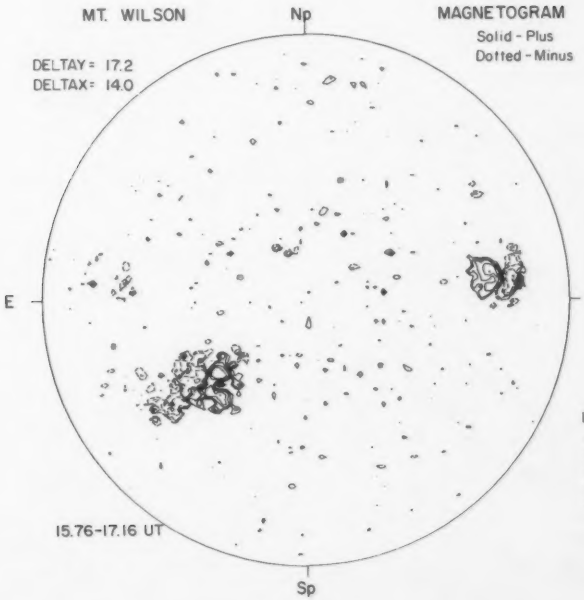
McMATH-HUL

1200 UT

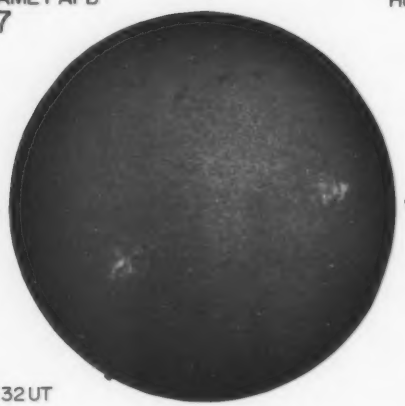
=-9.11, B_o = 1.26, L_o = 20.30)

HULBERT CALCIUM REPORT



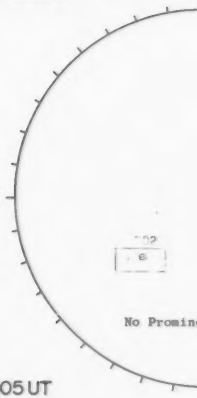


RAMEY AFB
17



1132 UT

BOULDER



1305 UT

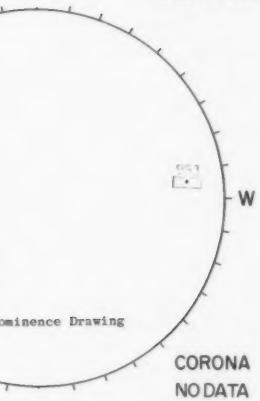
NELC LA POSTA

1626 UT

Np

SUNSPOTS

NRL
OSO-7



CORONA
NO DATA

Sp

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

Np

2.0 CM

Sp

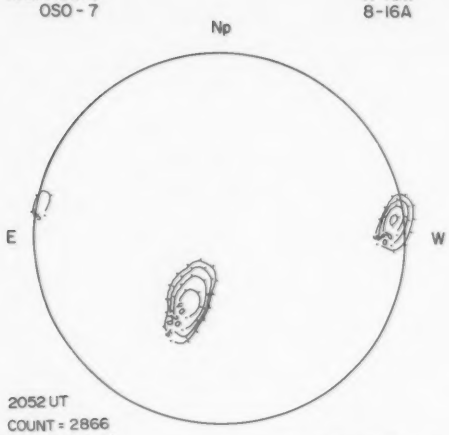
ANT. TEMP. UNIT 100°K

75
Jun 74

JUNE 18, 1974 (P=-8

NASA GSFC
OSO-7

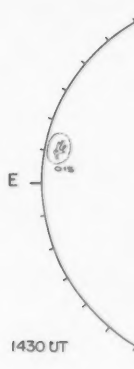
X-RAY
8-16A



2052 UT
COUNT = 2866
ROLL = 121.5°
P-TH = -7.10

Counts per 0.125 sec.

McMATH-HUL

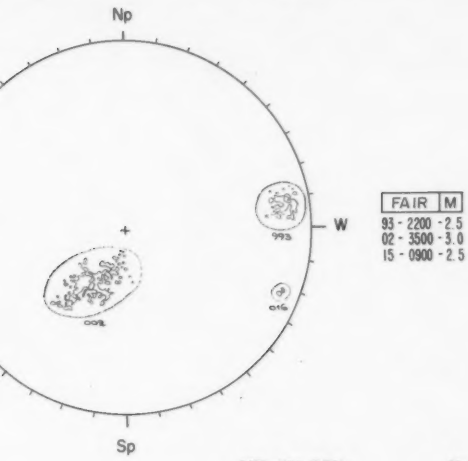


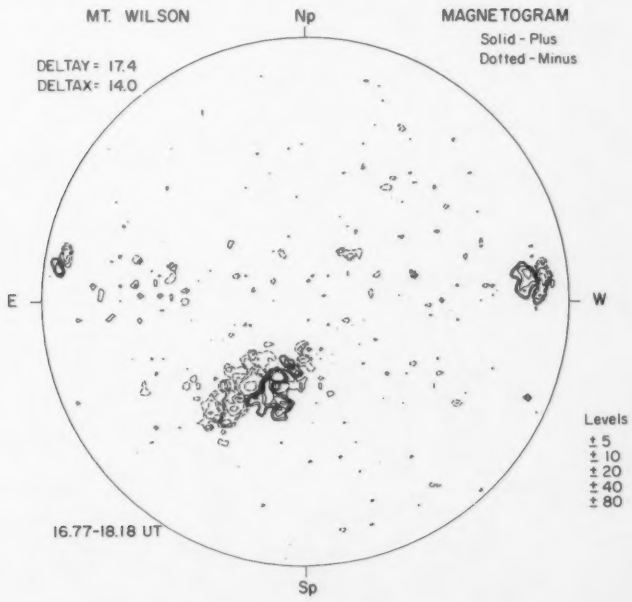
1430 UT

=-8.68, B_o = 1.38, L_o = 7.06)

76
Jun 74

HULBERT CALCIUM REPORT





RAMEY AFB

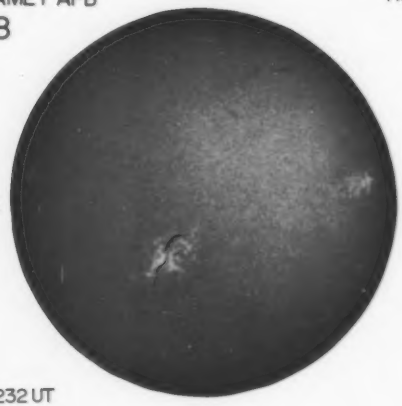
18

Np

Hα

E

W



1232 UT

Sp

BOULDER

E

NO DATA

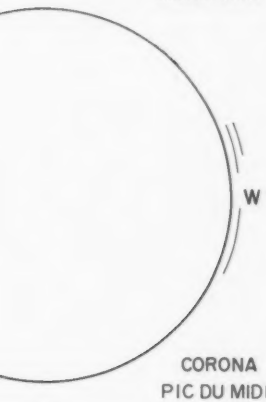
NELC LA POSTA

E

1648 UT

Np

SUNSPOTS



Sp

NRL
OSO-7

E

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

CORONA
PIC DU MIDI

2.0CM

Np

Sp

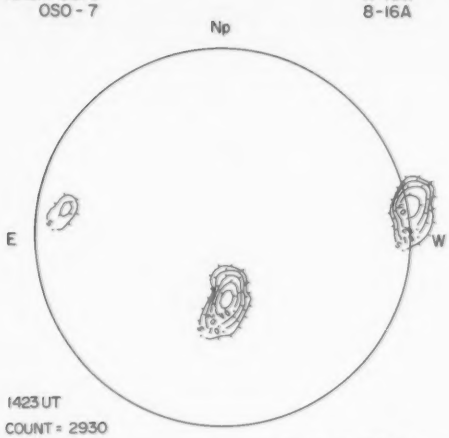
ANT. TEMP. UNIT 100° K

77
Jun 74

JUNE 19, 1974 (P=-8

NASA GSFC
OSO - 7

X-RAY
8-16A



1423 UT
COUNT = 2930
ROLL = 121.9°
P-TH = -7.08

Counts per 0.125 sec.

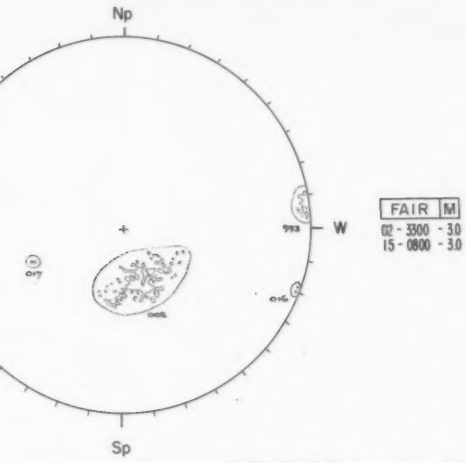
McMATH-HUL

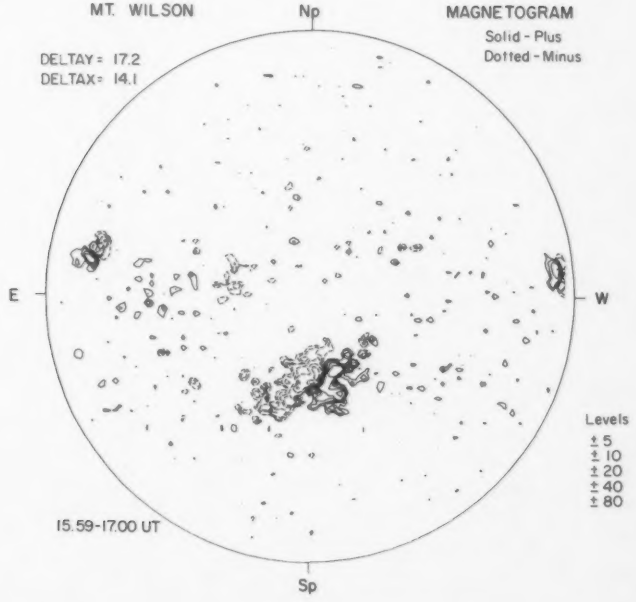
2150 UT

=-8.24, B_o = 1.50, L_o = 353.83)

78 Jun 74

HULBERT CALCIUM REPORT





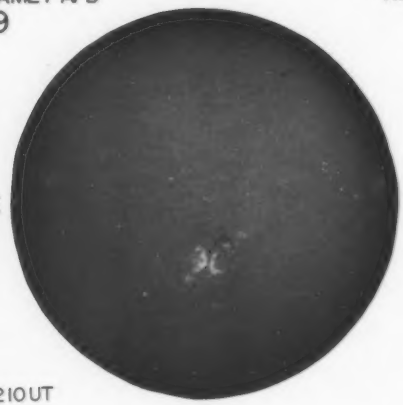
RAMEY AFB
19

Np

Hα

E

W



1210 UT

Sp

BOULDER

E

NO DATA

NELC LA POSTA

E

1810 UT

Np

SUNSPOTS

NRL
OSO-7

CORONA
PIC DU MIDI

Sp

Np

WHITE-LIGHT
CORONA

E

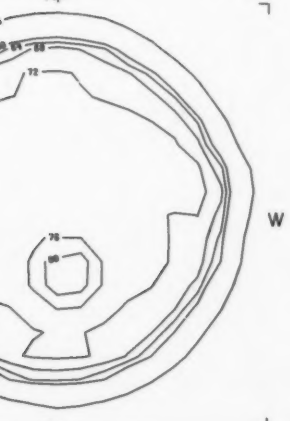
NO DATA

W

Sp

2.0 CM

Np



Sp

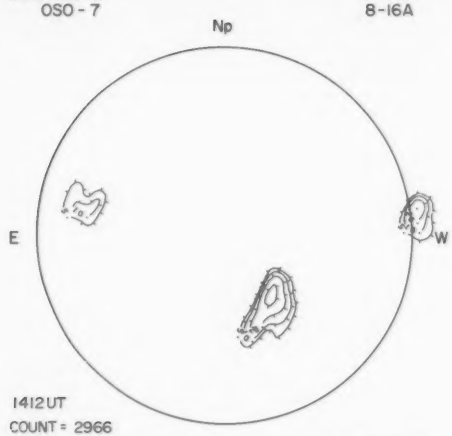
ANT. TEMP. UNIT 100° K

79
Jun 74

JUNE 20, 1974 (P=-7

NASA GSFC
OSO - 7

X-RAY
8-16A



1412 UT
COUNT = 2966
ROLL = 122.5°
P-TH = -7.05

Counts per 0.125 sec.

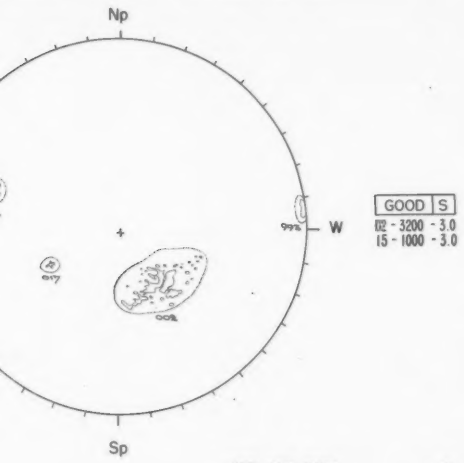
McMATH-HULB

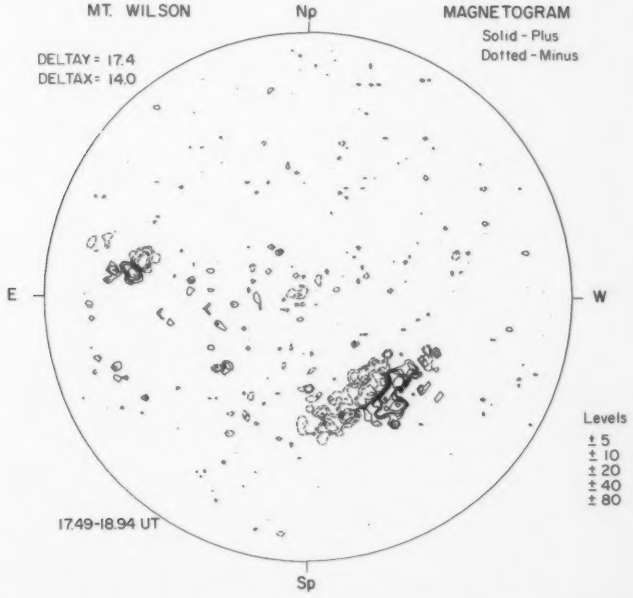
1240 UT

=-7.80, B_o = 1.61, L_o = 340.59)

80
Jun 74

HULBERT CALCIUM REPORT





RAMEY AFB

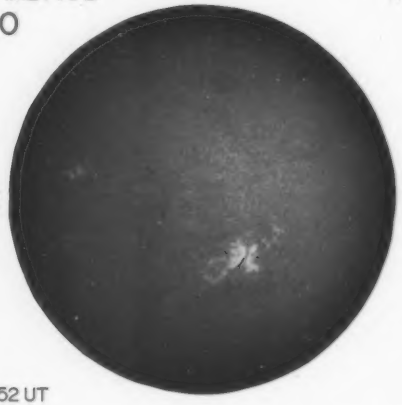
20

Np

Hα

E

W



1152 UT

Sp

BOULDER

E

NO DATA

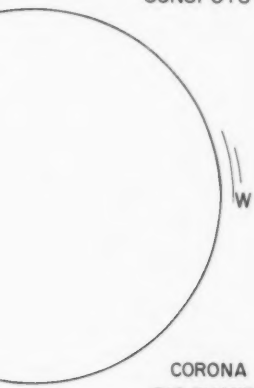
NELC LA POSTA

E

1612 UT

Np

SUNSPOTS



CORONA
PIC DU MIDI

Sp

NRL
OSO-7

E

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

Np

2.0 CM

Sp

ANT. TEMP. UNIT 100° K

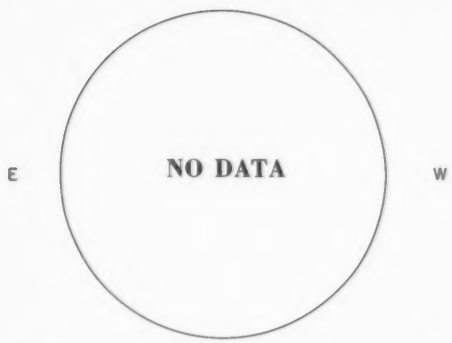
81
Jun 74

JUNE 21, 1974 (P=-7

NASA GSFC
OSO-7

X-RAY
8-16A

McMATH-HUL



1715 UT

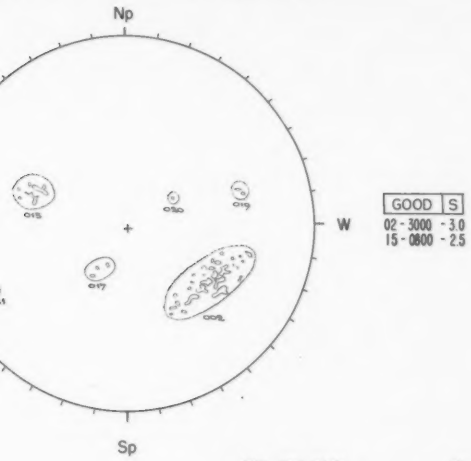
COUNT =
ROLL =
P-TH =

Counts per 0.125 sec.

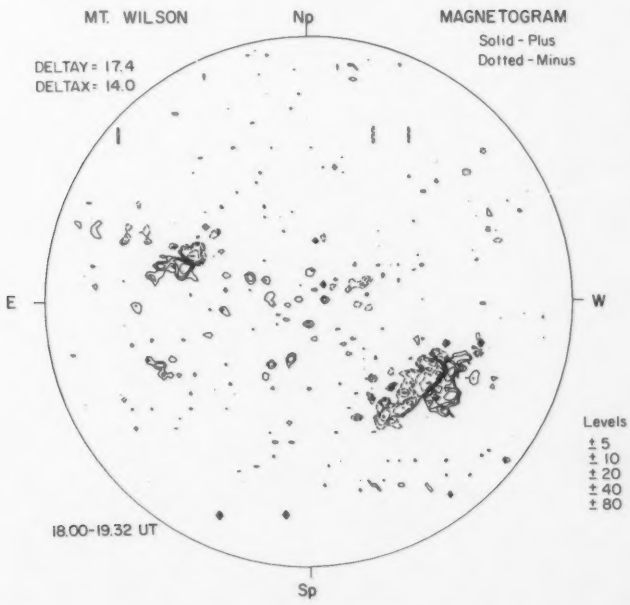
=-7.36, B_o = 1.73, L_o = 327.35)

82
Jun 74

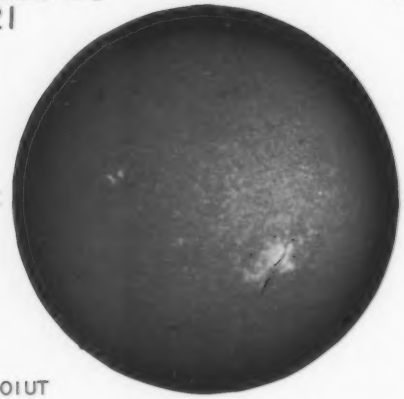
HULBERT CALCIUM REPORT



GOOD	S
02 - 3000	- 3.0
15 - 0800	- 2.5



RAMEY AFB
21

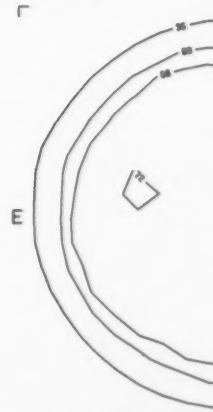


1101 UT

BOULDER

NO DATA

NELC LA POSTA



1910 UT

Np

SUNSPOTS

NRL

OSO-7

Np

WHITE-LIGHT CORONA

W

E

NO DATA

W

CORONA

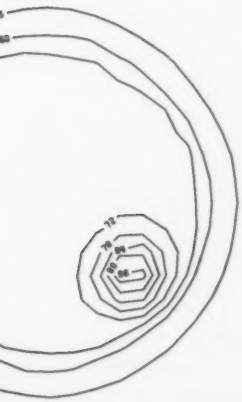
KISLOVODSK

Sp

Sp

2.0 CM

Np



ANT. TEMP. UNIT 100° K

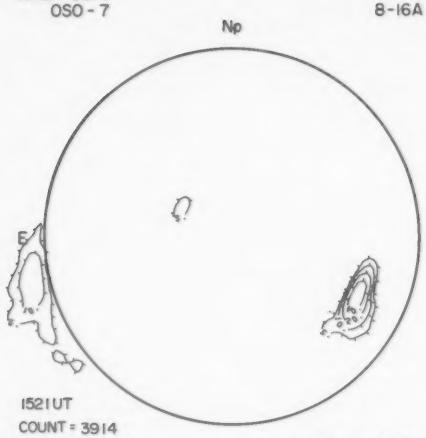
83

Jun 74

JUNE 22, 1974 (P=-6

NASA GSFC
OSO-7

X-RAY
8-16A



1521 UT
COUNT = 3914
ROLL = 123.3°
P-TH = -6.99

Counts per 0.125 sec.

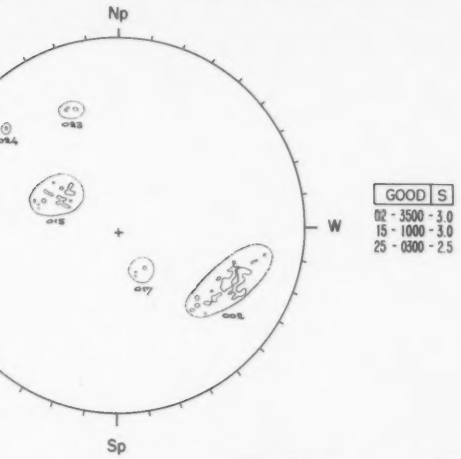
McMATH-HULB

1225 UT

=-6.92, B_o = 1.85, L_o = 314.12)

84
Jun 74

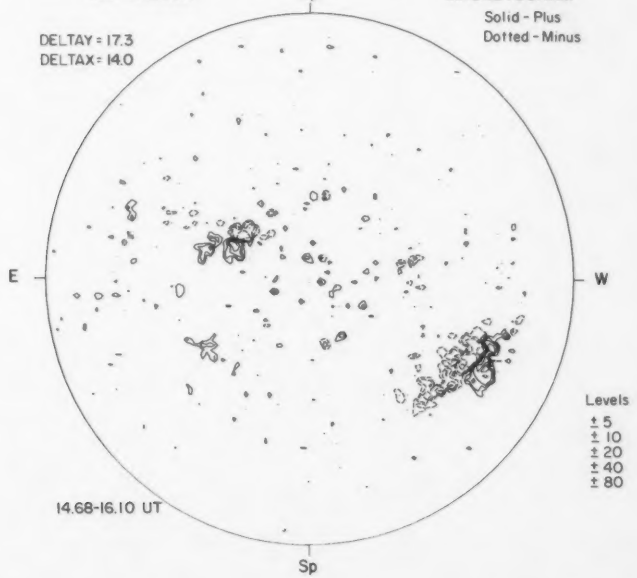
HULBERT CALCIUM REPORT



GOOD	S
02 - 3500 - 3.0	
15 - 1000 - 3.0	
25 - 0300 - 2.5	

MT. WILSON

DELTAY = 17.3
DELTAX = 14.0



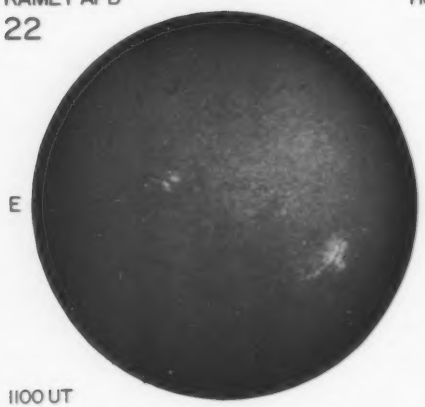
MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

14.68-16.10 UT

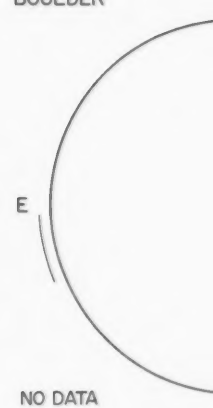
RAMEY AFB

22



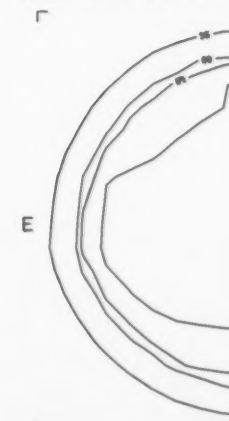
1100 UT

BOULDER



NO DATA

NELC LA POSTA



1710 UT

Np

SUNSPOTS

W

Sp

NRL

OSO-7

E

CORONA

NORIKURA

Np

WHITE-LIGHT

CORONA

NO DATA

W

Sp

2.0 CM

Np

W

Sp

ANT. TEMP. UNIT 100°K

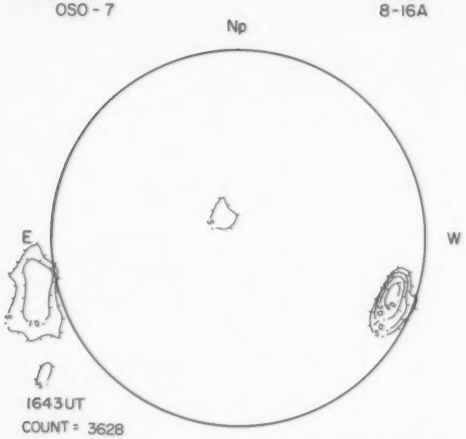
85

Jun 74

JUNE 23, 1974 (P=-6

NASA GSFC
OSO-7

X-RAY
8-16A



1643UT
COUNT = 3628
ROLL = 123.6°
P-TH = -6.96

Counts per 0.125 sec.

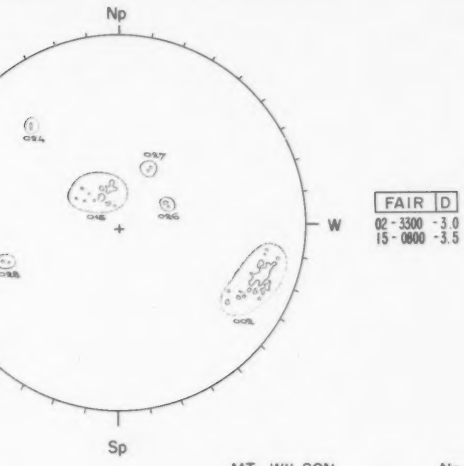
McMATH-HULB

1130UT

=-6.47, B_o = 1.96, L_o = 300.88)

86
Jun 74

HULBERT CALCIUM REPORT

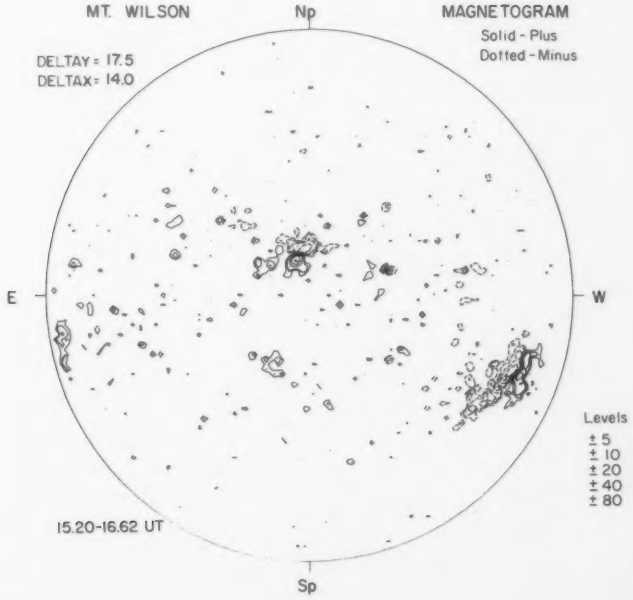


FAIR	D
02 - 3300	-3.0
15 - 0800	-3.5

MT. WILSON MAGNETOGRAM

DELTAY = 17.5
DELTAX = 14.0

Solid - Plus
Dotted - Minus



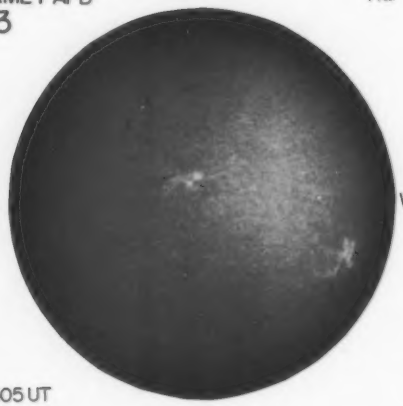
Levels
± 5
± 10
± 20
± 40
± 80

15.20-16.62 UT

RAMEY AFB
23

Np

Hα



E

W

1305 UT

Sp

BOULDER

N

E

NO DATA

S

NELC LA POSTA

N

NO

E

EQU

L

Np

SUNSPOTS

W

CORONA
NO DATA

Sp

Np

2.0CM

NO DATA

EQUIPMENT

W

Sp

ANT. TEMP. UNIT 100°K

NRL
OSO-7

E

Np

WHITE-LIGHT
CORONA

W

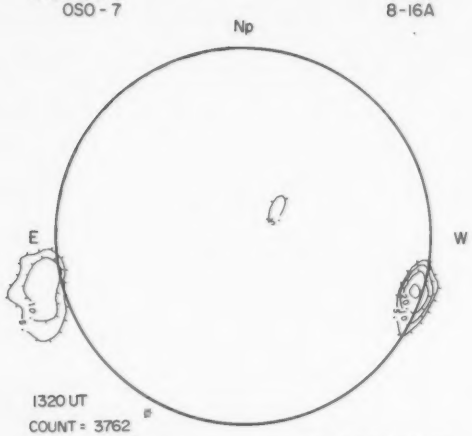
Sp

87
Jun 74

JUNE 24, 1974 (P=-6

NASA GSFC
OSO - 7

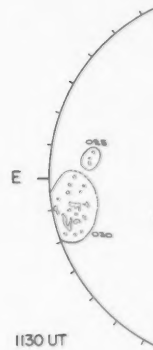
X-RAY
8-16A



1320 UT
COUNT = 3762
ROLL = 123.6°
P-TH = -6.93

Counts per 0.125 sec.

McMATH-HULB

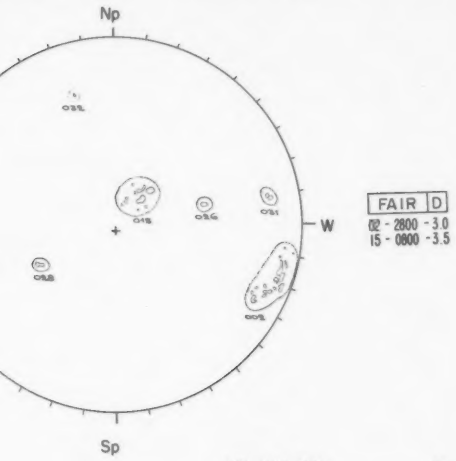


1130 UT

-6.03, B_o = 2.08, L_o = 287.64)

88
Jun 74

ULBERT CALCIUM REPORT



FAIR D
02 - 2800 - 3.0
15 - 0800 - 3.5

MT. WILSON Np MAGNETOGRAM

Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E W

Sp

Levels
± 5
± 10
± 20
± 40
± 80

RAMEY AFB

24

Np

Hα

E

W

1211 UT

Sp

BOULDER

E

NO DATA

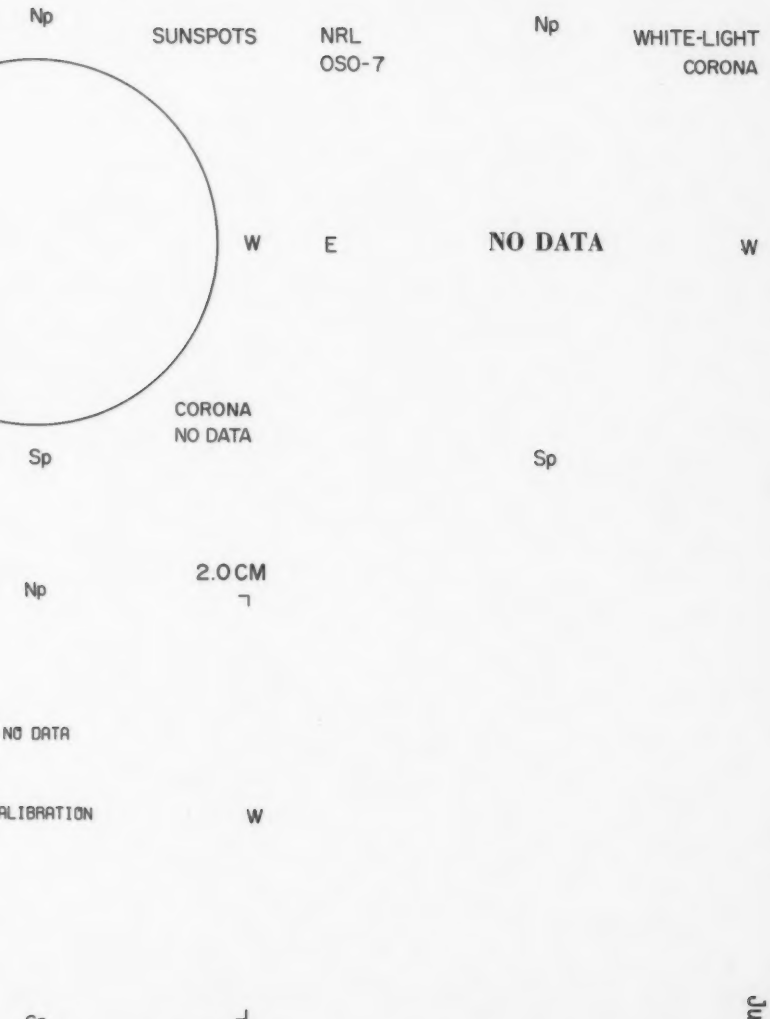
NELC LA POSTA

NO

E

CALI

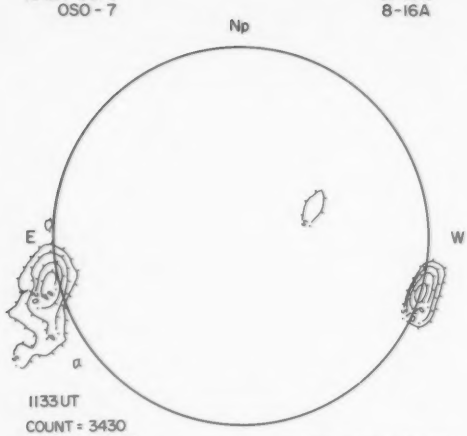
1731 UT


Np
SUNSPOTS
NRL
OSO-7
Np
WHITE-LIGHT
CORONA
W
E
NO DATA
W
CORONA
NO DATA
Sp
Sp
2.0 CM
Np
NO DATA
ALIBRATION
W
Sp
ANT. TEMP. UNIT 100° K
89
Jun 74

JUNE 25, 1974 (P=-5

NASA GSFC
OSO - 7

X-RAY
8-16A



1133 UT
COUNT = 3430
ROLL = 122.4°
P-TH = -6.89

Counts per 0.125 sec.

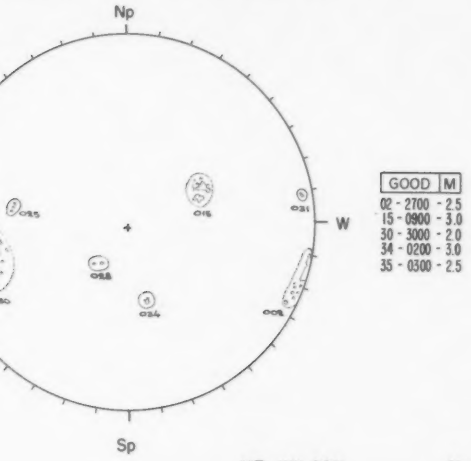
McMATH-HUL

1400 UT

=-5.58, B_o = 2.19, L_o = 274.41)

Jun 74 90

HULBERT CALCIUM REPORT

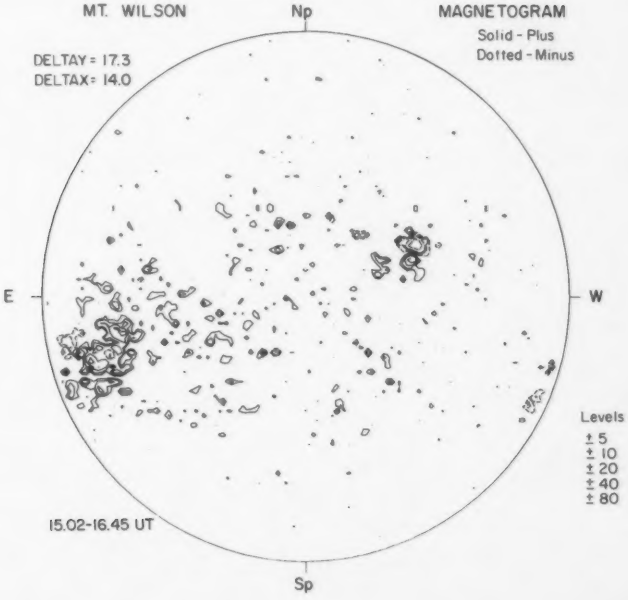


GOOD	M
02 - 2700	- 2.5
15 - 0900	- 3.0
30 - 3000	- 2.0
34 - 0200	- 3.0
35 - 0300	- 2.5

MT. WILSON MAGNETOGRAM

Solid - Plus
Dotted - Minus

DELTAY = 17.3
DELTAX = 14.0



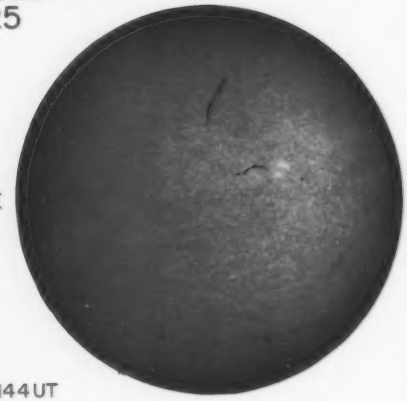
Levels
± 5
± 10
± 20
± 40
± 80

15.02-16.45 UT

RAMEY AFB
25

Np

Hα



E

W

1144 UT

Sp

BOULDER

Np

E

NO DATA

S

NELC LA POSTA

N

E

L

1534 UT

S

Np

SUNSPOTS

NRL
OSO-7

W E

CORONA
WENDELSTEIN

Sp

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

2.0 CM

Np

W

Sp

ANT. TEMP. UNIT 100° K

91
Jun 74

JUNE 26. 1974 (P=-5

NASA GSFC
OSO-7

X-RAY
8-16A

McMATH-HULB

Np

E

NO DATA

W

E

1215UT

COUNT =
ROLL =
P-TH =

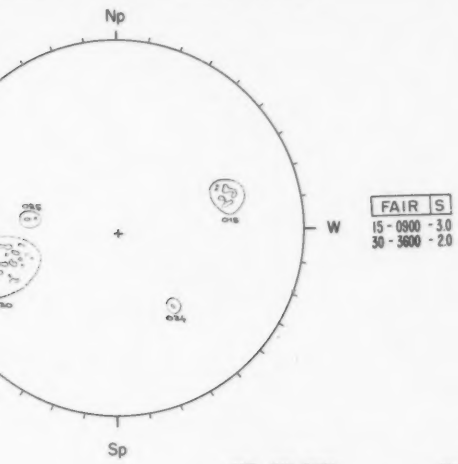
Sp

Counts per 0.125 sec.

-5.13, $B_o = 2.31$, $L_o = 261.17$)

92
Jun 74

HULBERT CALCIUM REPORT

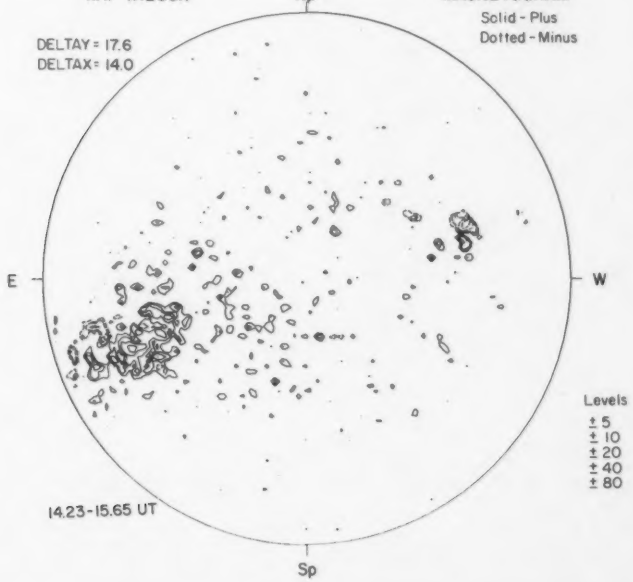


FAIR	S
15 - 0900	- 3.0
30 - 3600	- 2.0

MT. WILSON MAGNETOGRAM

Solid - Plus
Dotted - Minus

DELTAY = 17.6
DELTAX = 14.0



Levels
± 5
± 10
± 20
± 40
± 80

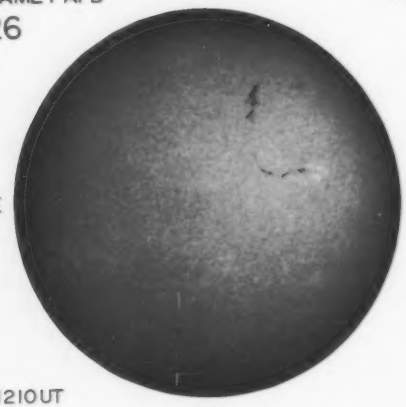
14.23-15.65 UT

RAMEY AFB

26

Np

Hα



E

W

1210UT

Sp

BOULDER

E

NO DATA

NELC LA POSTA

NO

E

EQU

Np

SUNSPOTS

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

W

E

NO DATA

W

CORONA
LOMNICKY-STIT

Sp

Sp

Np

2.0CM

NO DATA

EQUIPMENT

W

Sp

ANT. TEMP. UNIT 100° K

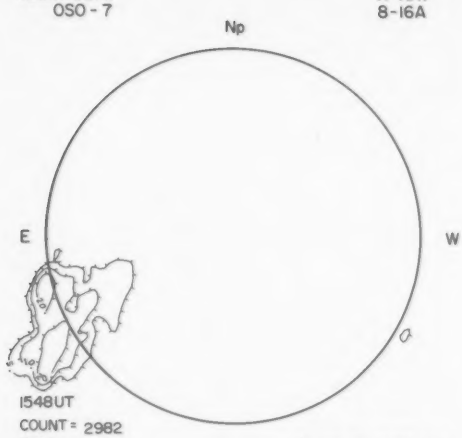
93
Jun 74

JUNE 27, 1974 (P=-4

NASA GSFC
OSO-7

X-RAY
8-16A

McMATH-HUL



1548UT
COUNT = 2982
ROLL = 120.3°
P-TH = -6.81

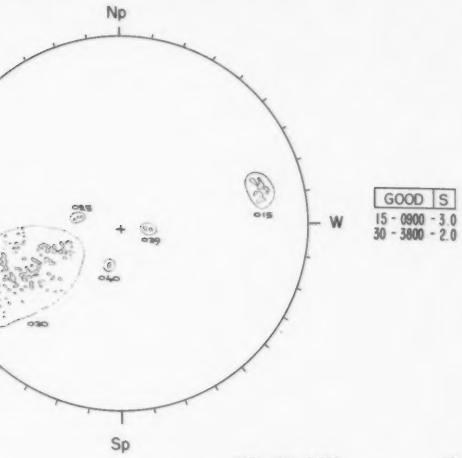
Counts per 0.125 sec.

1215UT

-4.68, B_o=2.42, L_o=247.93)

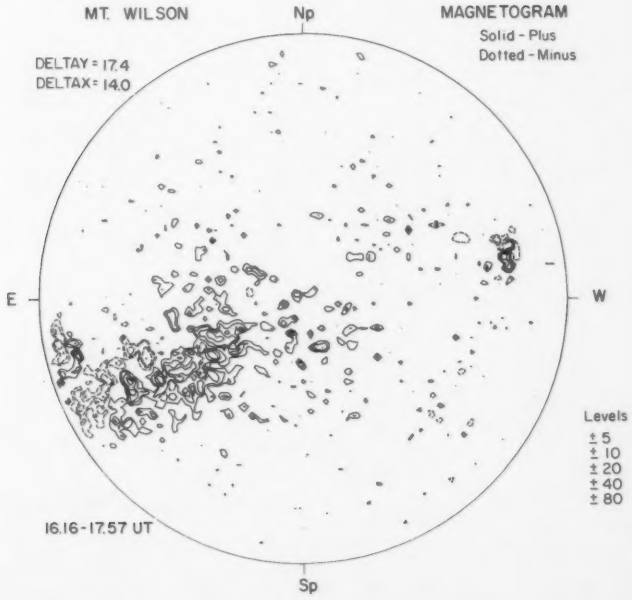
94
Jun 74

HULBERT CALCIUM REPORT



GOOD | S
15 - 0900 - 3.0
30 - 3800 - 2.0

MT. WILSON



MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

RAMEY AFB

27

Np

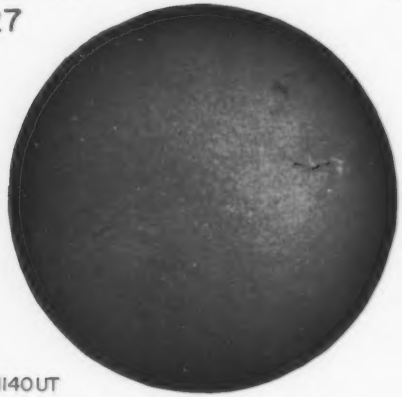
Hα

E

W

1140 UT

Sp



BOULDER

E

NO DATA

NELC LA POSTA

NO

E

EQU

Np

SUNSPOTS

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

W

E

NO DATA

W

CORONA
NO DATA

Sp

Sp

Np

2.0 CM

NO DATA

EQUIPMENT

W

Sp

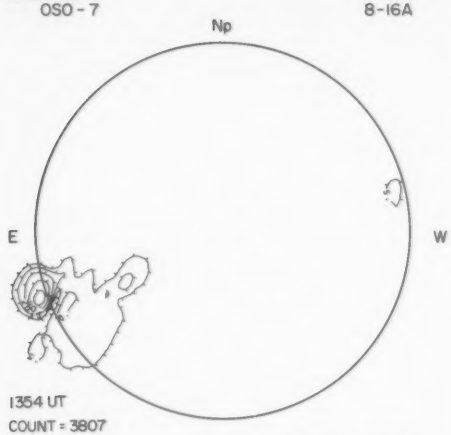
ANT. TEMP. UNIT 100°K

95
Jun 74

JUNE 28, 1974 (P=-4.

NASA GSFC
OSO - 7

X-RAY
8-16A



1354 UT
COUNT = 3807
ROLL = 120.4°
P-TH = -6.77

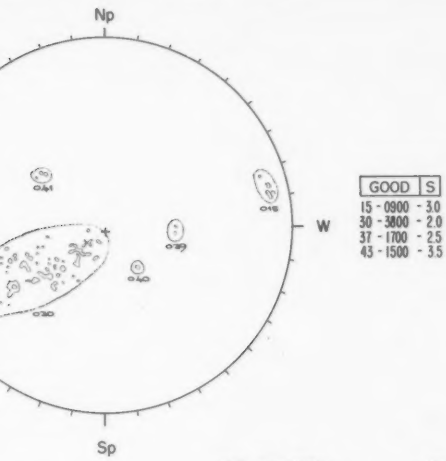
Counts per 0.125 sec.

McMATH-HULBE

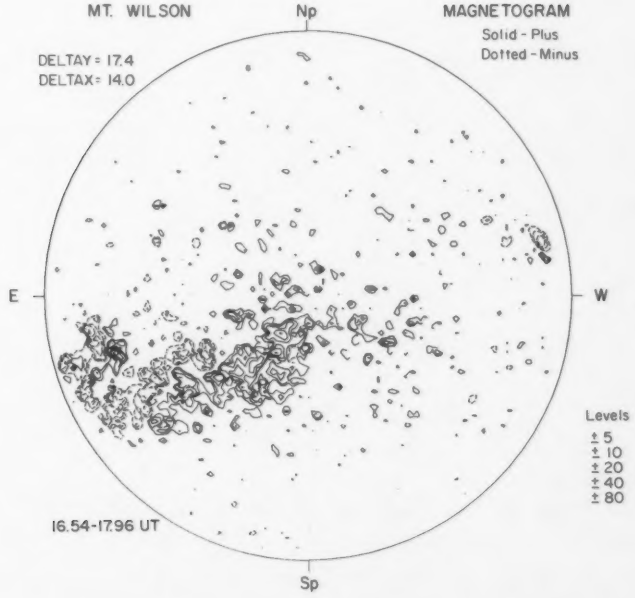
1300 UT

-4.23, B_o = 2.54, L_o = 234.70)

ULBERT CALCIUM REPORT



GOOD	S
15 - 0900	- 3.0
30 - 3800	- 2.0
37 - 1700	- 2.5
43 - 1500	- 3.5



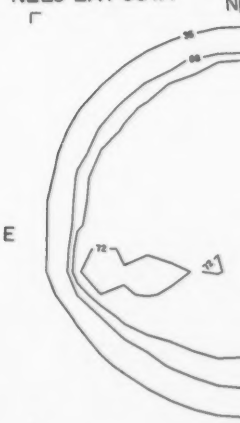
RAMEY AFB
28

1205 UT

BOULDER

NO DATA

NELC LA POSTA



1748UT

Np

SUNSPOTS

NRL
OSO-7

W E

CORONA
NO DATA

Sp

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

Np

2.0CM

W

Sp

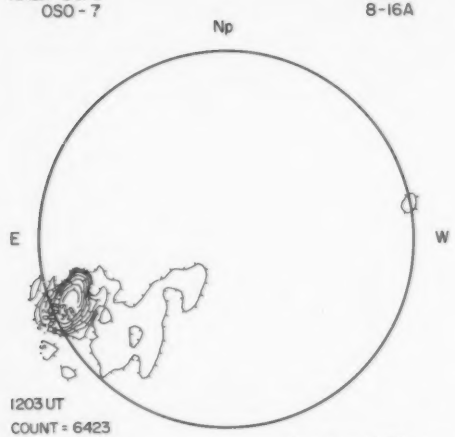
ANT. TEMP. UNIT 100° K

97
Jun 74

JUNE 29, 1974 (P=-3.

NASA GSFC
OSO - 7

X-RAY
8-16A



1203 UT
COUNT = 6423
ROLL = 121.3°
P-TH = -6.73

Counts per 0.125 sec.

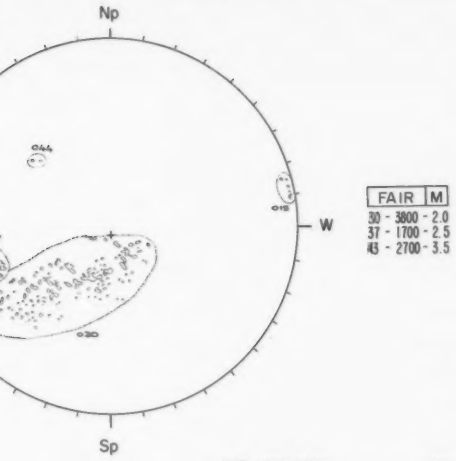
McMATH-HULBE

1200UT

-3.77, B_o=2.65, L_o=221.46)

98
Jun 74

ULBERT CALCIUM REPORT

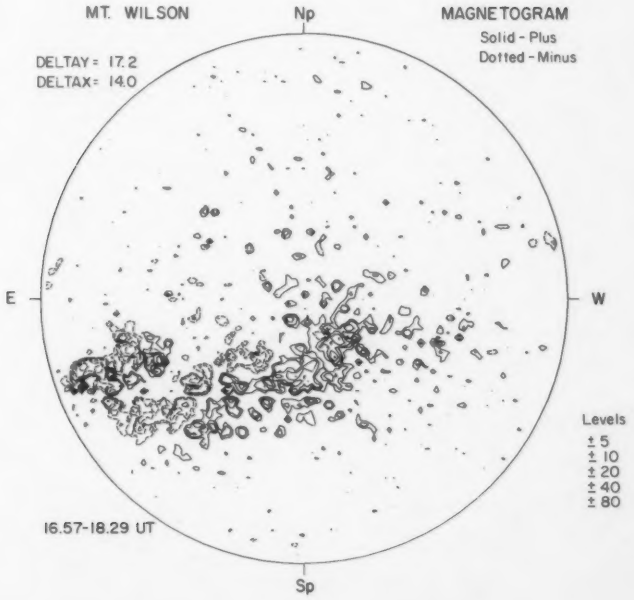


FAIR	M
30 - 3800 - 2.0	
37 - 1700 - 2.5	
45 - 2700 - 3.5	

MT. WILSON MAGNETOGRAM

Solid - Plus
Dotted - Minus

DELTAY = 17.2
DELTAX = 14.0



Levels
±5
±10
±20
±40
±80

16.57-18.29 UT

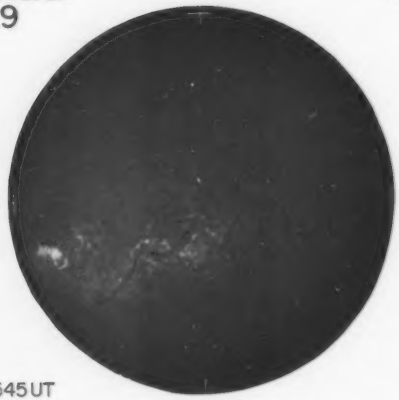
BOULDER
29

Np

Hα

E

W



1545 UT

Sp

BOULDER

N

E

No Prominen

1228 UT

S

NELC LA POSTA

N

E

1819 UT

Np

SUNSPOTS

NRL
OSO-7

inence Drawing

CORONA
KISLOVODSK

Sp

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

2.0CM

Np

Sp

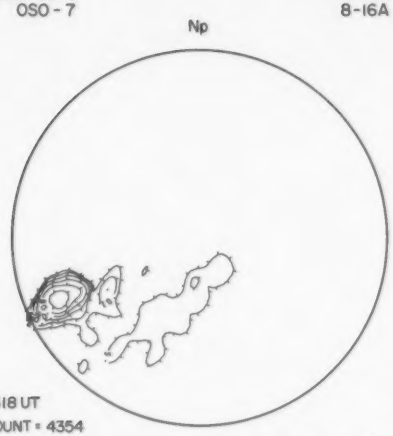
ANT. TEMP. UNIT 100° K

99
Jun 74

JUNE 30, 1974 (P=-3

NASA GSFC
OSO-7

X-RAY
8-16A



1318 UT
COUNT = 4354
ROLL = 124.5°
P-TH = -6.68

Counts per 0.125 sec.

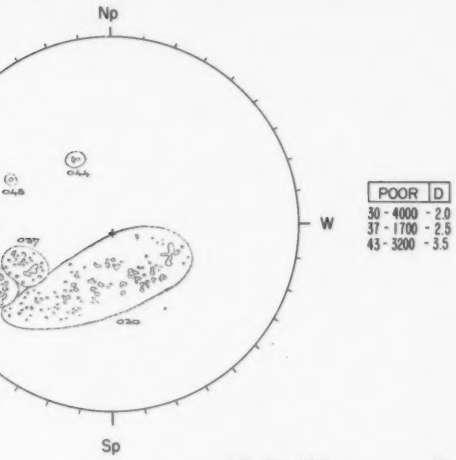
McMATH-HULB

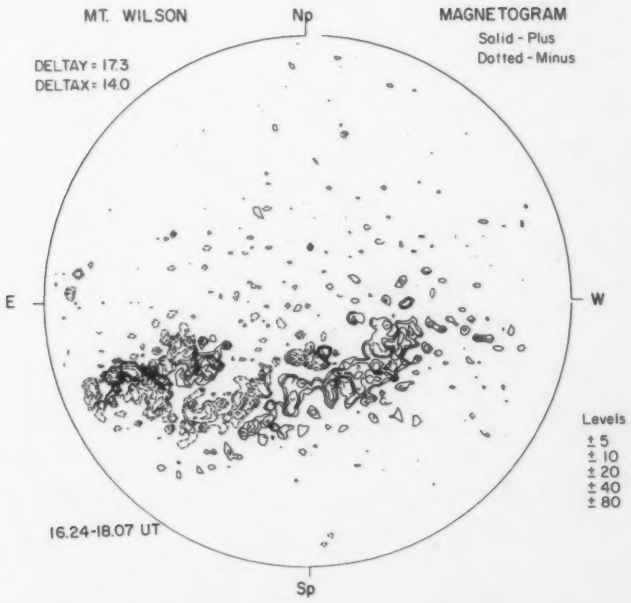
1300 UT

-3.32, B_o=2.76, L_o=208.22)

100
Jun 74

ULBERT CALCIUM REPORT





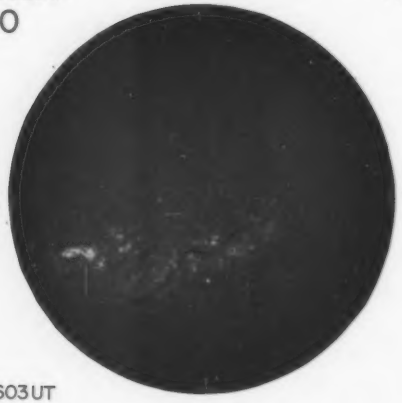
BOULDER
30

Np

Hα

E

W



1603UT

Sp

BOULDER

N

E

1417UT

NELC LA POSTA

N

E

1801 UT

Np

SUNSPOTS

Sp

NRL
OSO-7

W E

CORONA
PIC DU MIDI

Np

WHITE-LIGHT
CORONA

NO DATA

W

Sp

Np

2.0CM

Sp

ANT. TEMP. UNIT 100°K

101
Jun 74

REGIONS OF SOLAR ACTIVITY

JUNE 1974

MCMATH REGION 12970 CMP DATE 1.7 RETURN OF REGION 12904 ROTATION 3

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	5									S04 E76				B	0	0	AXX
74	5	27	12970	S04 E69	223	600	1.5										
74	5	28	12970	S04 E54	224	600	1.5										
74	5	29	12970	S04 E36	224	600	1.5										
74	5	30	12970	S04 E29	224	700	1.5										
74	5	31	12970	S04 E15	223	600	1.5										
74	6	1	12970	S04 E01	223	500	1.5										
74	6	2	12970	S04 W12	223	500	1.5										
74	6	3	12970	S04 W26	224	500	2.0										
74	6	4	12970	S04 W40	224	300	1.0										
74	6	5	12970	S04 W53	225	300	1.0										

MCMATH REGION 12979 CMP DATE 3.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	1	12979	S34 E20	204	100	1.5										

MCMATH REGION 12983 CMP DATE 3.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	4	12983	N01 W19	203	100	2.0										

MCMATH REGION 12980 CMP DATE 3.2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	3	12980	N49 W04	202	100	1.5										

MCMATH REGION 12972 CMP DATE 3.4 RETURN OF REGION 12906 & 12915 ROTATION 2 & 3

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	5	27	12972	S10 E79	213	1100	1.5										
74	5	28	12972	S10 E72	206	2000	2.0										
74	5	29	12972	S12 E60	200	5500	3.0		19398	S12 E62	211	(A)	3				
74	5	30	12972	S12 E50	203	6000	3.0		19399	S16 E63	197	X					
74	5	31	12972	S13 E37	201	6500	3.0										
74	6	1	12972	S14 E25	199	6500	3.0										
74	6	2	12972	S15 E12	199	6500	3.0		19401	S10 E03	206	(AP)	2				
74	6								19402	S13 E06	203	(BP)	1				
74	6	3	12972	S14 E01	197	7000	3.5		19402	S13 W08	204	(BP)	4	R	30	10	DAO
74	6								19405	S14 E05	191	(B)	2	R	0	3	BXO
74	6								19406	S14 E17	179	(AP)	1				
74	6								19407	S10 E18	178	(AP)	2				
74	6	3	12972						19403	S14 W18	214	(AP)	1				
74	6								19404	S04 W14	210	(BP)	1				
74	6	4	12972	S13 W07	191	7500	3.0		19402	S14 W21	204	(BP)	3	R	20	7	CRO
74	6								19409	S07 W08	191	(A)	1				
74	6								19405	S14 W06	189	X					
74	6	4	12972						19403	S13 W32	215	(AP)	2				
74	6								19404	S05 W28	211	(AP)	1				
74	6	5	12972	S13 W20	192	7500	3.0		19402	S13 W37	206	(AP)	2	R	10	5	BXO
74	6								19409	S10 W13	182	(A)	1				
74	6								19405	S14 W10	179	AF					
74	6	5	12972						19404	S08 W39	208	(AP)	2				
74	6	6	12972	S13 W33	192	7100	2.5		19402	S13 W51	208	(AP)	1	H	20	3	BXO
74	6	6	12972				0		19404	S08 W53	210	(AP)	2	H	10	1	AXX
74	6	7	12972	S13 W46	191	7300	2.5										
74	6	8	12972	S13 W61	190	6500	2.5										
74	6	9	12972	S13 W71	189	5500	2.0										
74	6	10	12972	S13 W79	185	3500	2.0										
74	6	11	12972	S14 W90	183	1000	1.5										

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MCMATH REGION 12985 CMP DATE 3.6

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	5	12985	N15 W25	197	100	1.5									
74	6	6	12985	N14 W38	197	200	1.0									

MCMATH REGION 12987 CMP DATE 4.9

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	5	12987	S34 W08	180	100	2.0									

MCMATH REGION 12986 CMP DATE 5.8

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	5	12986	N17 E04	168	100	2.0									
74	6	6	12986	N17 W10	169	200	1.5									
74	6	7	12986	N17 W23	168	100	1.5									

MCMATH REGION 12977 CMP DATE 6.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	5	30	12977	S13 E88	165	3000	3.5	19400	S15 E80	180	X		R	0	2	HAX
74	5	31	12977	S13 E74	164	3200	3.5	19400	S15 E64	169	(BP)	3				
74	6	1	12977	S14 E61	163	3200	3.5	19400	S14 E58	165	(BP)	4	R	220	9	EAI
74	6	2	12977	S14 E49	162	2700	3.5	19400	S14 E45	164	(BP)	5	R	130	16	OSI
74	6	3	12977	S14 E36	162	3000	3.5	19408	S20 E21	175	(AF)	1				
74	6							19400	S15 E31	165	(BP)	5	R	140	23	DAI
74	6	4	12977	S14 E21	163	3000	3.5	19400	S15 E17	166	(BP)	5	R	120	19	OSI
74	6	5	12977	S14 E08	164	2800	3.0	19400	S15 E04	165	(BP)	5	R	80	18	CSI
74	6								S11 E13				R	0	2	AXX
74	6	6	12977	S14 W05	164	2700	3.0	19400	S14 W10	167	(BP)	4				
74	6							19413	S14 W02	159	(BF)	2	M	80	10	CAI
74	6								S15 E05				M	40	5	BXO
74	6	7	12977	S14 W18	163	2800	3.0	19400	S14 W24	166	(BP)	3	R	30	5	DSI
74	6							19413	S15 W16	158	(BF)	3	R	0	1	AXX
74	6								S11 W16				R	0	2	BXO
74	6	8	12977	S14 W34	163	3000	3.0	19400	S14 W37	167	(BP)	4	R	60	7	DSI
74	6							19413	S15 W28	158	(BF)	2	R	10	3	BXO
74	6	9	12977	S14 W44	162	2500	2.5	19400	S14 W53	170	(AP)	3	R	40	7	CRI
74	6							19413	S15 W40	157	(AF)	2	R	10	1	HRX
74	6	10	12977	S14 W57	163	2700	3.0	19400	S14 W66	170	(AP)	2	R	10	1	HSX
74	6							19413	S16 W55	159	(BP)	1				
74	6	11	12977	S14 W70	163	2100	2.5		S12 W67				R	10	1	HSX
74	6	12	12977	S15 W80	159	2300	2.0									

MCMATH REGION 12994 CMP DATE 6.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	9	12994	N15 W45	163	200	1.5	19416	N14 W46	163	(AF)	1				
74	6	10	12994	N15 W58	164	100	1.0									

MCMATH REGION 12995 CMP DATE 6.2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	7	12995	S07 W18	163	200	2.5									
74	6	8	12995	S06 W35	164	300	2.5									
74	6	9	12995	S06 W45	163	500	3.0	19417	S08 W46	163	(BF)	3	R	10	6	CRO
74	6	10	12995	S07 W58	164	900	3.0	19417	S08 W62	166	(BP)	3	R	20	6	CRO
74	6	11	12995	S07 W72	165	900	3.0	19417	S08 W78	169	(AP)	3	R	40	3	CSO
74	6	12	12995	S07 W85	164	700	3.0									

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MCMATH REGION 13004 CMP DATE 7.4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	13	13004	N53 W81	147	100	1.0									

MCMATH REGION 12990 CMP DATE 8.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	3	12990	S14 E59	139	100	1.5									
74	6	4	12990	S14 E45	139	200	1.0									
74	6	5	12990	S13 E32	140	200	2.0	19411	S17 E27	142	BF					
74	6							19412	S14 E28	141	(AP)	2				
74	6	6	12990	S14 E19	140	400	2.5	19412	S14 E14	143	(AP)	2	M	20	3	BXO
74	6							19411	S18 E16	141	(BP)	1				
74	6	7	12990	S15 E06	139	400	2.0									
74	6	8	12990	S15 W12	141	600	2.0	19415	S14 W12	142	(AP)	3	R	20	2	HSX
74	6	9	12990	S14 W24	142	500	2.0	19415	S14 W25	142	(BP)	2	R	20	9	CRI
74	6	10	12990	S14 W36	142	600	2.5	19415	S12 W38	142	(AP)	2	R	10	1	HSX
74	6	11	12990	S14 W48	141	600	2.5									
74	6	12	12990	S14 W61	140	700	2.5									
74	6	13	12990	S14 W74	140	800	2.5	19419	S16 W76	140	BF					
74	6	14	12990	S15 W87	140	600	1.5									

MCMATH REGION 12988 CMP DATE 8.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	5	12988	N38 E31	141	100	1.0									
74	6	6	12988	N38 E19	140	100	1.0									

MCMATH REGION 12989 CMP DATE 8.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	4	12989	S06 E47	137	200	1.0									
74	6	5	12989	S06 E34	138	200	1.5									
74	6	6	12989	S06 E20	139	100	1.0									
74	6	7	12989	S05 E07	138	100	1.0									

MCMATH REGION 12984 CMP DATE 9.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	4	12984	S15 E60	124	200	1.5									
74	6	5	12984	S15 E47	125	300	1.5									
74	6	6	12984	S14 E34	125	300	1.5									
74	6	7	12984	S14 E19	126	300	1.5									
74	6	8	12984	S14 E03	126	400	1.5									
74	6	9	12984	S14 W07	125	400	1.5									
74	6	10	12984	S14 W21	127	200	1.0									
74	6	11	12984	S14 W33	126	200	1.0									
74	6	12	12984	S14 W45	124	300	1.0									
74	6	13	12984	S14 W57	123	300	1.0									
74	6	14	12984	S14 W69	122	300	1.0									

MCMATH REGION 12981 CMP DATE 9.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	3	12981	N05 E78	120	400	1.0									
74	6	4	12981	N06 E64	120	500	4.0	19410	N05 E58	125	(AP)	3	R	0	1	AXX
74	6	5	12981	N06 E48	124	800	3.5	19410	N05 E45	124	(B)	4	R	130	5	DAO
74	6	6	12981	N06 E35	124	1500	3.0	19410	N05 E32	125	(BF)	4	M	180	8	DAO
74	6	7	12981	N06 E21	124	1500	3.5	19410	N04 E16	126	(BP)	4	R	70	3	DAO
74	6	8	12981	N06 E04	125	1500	3.5	19410	N04 E03	127	(BP)	3	R	70	5	DAO
74	6	9	12981	N06 W08	126	1200	2.5	19410	N04 W11	128	(BP)	3	R	80	16	DAI
74	6	10	12981	N06 W21	127	1100	3.0	19410	N04 W24	128	(BP)	2	R	10	4	HRX

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74	6	11	12981	N06 W34	127	1100	3.0	19410	N04 W41	132	(BP)	1	R	10	4	HRX
74	6	12	12981	N06 W47	126	1100	3.0	19410	N06 W55	132	(BP)	3	R	0	1	AXX
74	6	13	12981	N06 W60	126	1000	2.5	19410	N05 W70	134	AP					
74	6	14	12981	N06 W73	126	1000	2.5									
74	6	15	12981	N06 W85	124	300	1.0									

MCMATH REGION 12996 CMP DATE 10.5

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	9	12996	S36 E13	105	100	1.0								
74	6	10	12996	S36 E02	104	100	1.0								

MCMATH REGION 13003 CMP DATE 10.6

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	13	13003	N16 W38	104	100	2.5								
74	6	14	13003	N15 W53	106	200	2.5								
74	6	15	13003	N16 W68	107	200	2.0								
74	6	16	13003	N15 W81	107	200	1.0								

MCMATH REGION 12991 CMP DATE 10.7

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	5	12991	S18 E69	103	100	1.5								
74	6	6	12991	S17 E55	104	100	1.0								

MCMATH REGION 12999 CMP DATE 10.7

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	10	12999	S25 E03	103	100	1.5								

MCMATH REGION 13006 CMP DATE 11.6

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	15	13006	S15 W53	92	100	1.0								

MCMATH REGION 12992 CMP DATE 11.7

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	6	12992	S04 E68	91	100	1.0								

MCMATH REGION 13001 CMP DATE 12.2

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	11	13001	N14 E09	84	100	2.0								
74	6	12	13001	N14 W04	83	100	2.0								
74	6	13	13001	N14 W18	84	100	1.0								

MCMATH REGION 13007 CMP DATE 13.7

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
74	6	15	13007	S15 W25	64	400	1.5								
74	6	16	13007	S15 W34	60	200	1.5								

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MCMATH REGION 13016 CMP DATE 13.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	18	13016	S20 W63	62	300	1.5									
74	6	19	13016	S20 W80	63	200	1.0									

MCMATH REGION 12998 CMP DATE 14.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	9	12998	S05 E59	59	100	1.0									

MCMATH REGION 12993 CMP DATE 14.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	7	12993	N07 E83	62	600	1.5	19414	N04 E88	54	AP					
74	6	8	12993	N06 E75	54	1500	3.0	19414	N04 E74	56	(BP)	3				
74	6	9	12993	N06 E62	56	1500	3.5	19414	N04 E59	58	(BP)	4	R	80	7	DAO
74	6	10	12993	N06 E49	57	2300	3.5	19414	N05 E44	60	(BP)	5	R	80	22	DAI
74	6								N05 E47				R	80	22	EAI
74	6	11	12993	N06 E35	58	2600	3.5	19414	N05 E29	62	(BP)	5	R	140	16	ESI
74	6	12	12993	N06 E22	57	2700	3.0	19414	N06 E16	61	(BP)	5	R	160	16	ESI
74	6	13	12993	N06 E08	58	2600	3.0	19414	N06 E03	61	(BP)	6	R	200	23	EHI
74	6	14	12993	N06 W07	60	2700	3.5	19414	N06 W14	62	(BP)	5				
74	6	15	12993	N06 W22	61	2800	3.0	19414	N06 W26	61	(BP)	5	R	150	5	DSO
74	6	16	12993	N06 W34	60	2600	3.0	19414	N05 W40	65	(BP)	5				
74	6	17	12993	N06 W47	60	2600	3.0	19414	N06 W53	63	(BP	3	R	30	1	HSX
74	6	18	12993	N06 W62	61	2200	2.5	19414	N06 W67	66	(AP)	3	H	30	1	HRX
74	6	19	12993	N06 W79	62	2200	2.0									
74	6	20	12993	N06 W87	62	1200	2.0									

MCMATH REGION 12997 CMP DATE 14.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	9	12997	S13 E60	58	100	1.5									

MCMATH REGION 13010 CMP DATE 14.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	15	13010	N40 W09	48	100	1.0									

MCMATH REGION 13012 CMP DATE 15.5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	16	13012	S06 W14	40	100	1.5									

MCMATH REGION 13008 CMP DATE 15.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	15	13008	S34 E01	38	100	1.0									

MCMATH REGION 13000 CMP DATE 16.6

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	10	13000	N14 E80	26	200	1.5									

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MCMATH REGION 13011 CMP DATE 18.2

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	15	13011	N47 E34	5	100	1.0									

MCMATH REGION 13019 CMP DATE 18.8

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	21	13019	N11 W39	357	200	1.5									

MCMATH REGION 13002 CMP DATE 19.5 RETURN OF REGION 12968 ROTATION 2

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	12	13002	S13 E87	353	600	1.5	19418	S14 E87	351	AP					
74	6	13	13002	S15 E78	349	2500	2.0	19418	S14 E73	352	(AP)	5	R	140	1	HSX
74	6	14	13002	S16 E64	350	2800	3.0	19420	S19 E56	353	(A)	1				
74	6							19418	S15 E59	350	(BP)	4				
74	6	15	13002	S16 E50	350	3300	3.5	19418	S15 E46	350	(BP)	4	R	160	6	HSX
74	6	16	13002	S16 E39	348	3300	3.5	19418	S15 E37	349	(BP)	5				
74	6	17	13002	S16 E26	348	3000	3.5	19421	S12 E16	355	(AF)	1				
74	6							19418	S16 E23	348	(BP)	5	R	150	2	HAX
74	6	18	13002	S16 E12	348	3500	3.0	19418	S14 E08	352	(BP	4	M	210	8	CHO
74	6	19	13002	S16 W05	348	3300	3.0	19418	S14 W06	353	(BP	4	M	190	5	CAO
74	6	20	13002	S16 W14	349	3200	3.0	19418	S14 W21	350	AP		M	190	5	CAO
74	6								S14 W23				M	120	6	CAO
74	6	21	13002	S17 W30	348	3000	3.0	19418	S14 W36	352	(AP)	2	R	60	5	HAX
74	6	22	13002	S17 W41	349	3500	3.0	19418	S13 W47	351	(AP)	2	M	20	4	BXO
74	6								S14 W50				M	20	4	BGO
74	6	23	13002	S16 W52	347	3300	3.0	19418	S13 W59	353	(AP)	2	M	20	4	BGO
74	6								S14 W63				M	10	1	AXX
74	6	24	13002	S16 W65	347	2800	3.0									
74	6	25	13002	S16 W80	348	2700	2.5									

MCMATH REGION 13031 CMP DATE 20.1

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	24	13031	N09 W58	340	200	1.5									
74	6	25	13031	N09 W72	340	100	1.0									

MCMATH REGION 13013 CMP DATE 20.6

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	16	13013	S54 E54	333	100	1.0									

MCMATH REGION 13014 CMP DATE 20.6

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	16	13014	N08 E53	334	100	1.0									

MCMATH REGION 13020 CMP DATE 20.7

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	21	13020	N10 W14	332	100	1.0									

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MCMATH REGION 13017 CMP DATE 22.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	19	13017	S11 E30	313	200	2.5		S12 E28				M	0	1	AXX
74	6	20	13017	S11 E22	313	300	2.0									
74	6	21	13017	S12 E08	310	300	1.0									
74	6	22	13017	S12 W07	315	300	1.0									

MCMATH REGION 13026 CMP DATE 22.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	23	13026	N08 W16	311	100	2.0									
74	6	24	13026	N08 W29	311	100	1.5									

MCMATH REGION 13027 CMP DATE 22.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	23	13027	N19 W10	305	100	2.0									

MCMATH REGION 13015 CMP DATE 23.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	17	13015	N10 E84	290	600	2.0									
74	6	18	13015	N11 E69	291	900	2.5									
74	6	19	13015	N11 E53	290	800	3.0									
74	6	20	13015	N11 E45	290	1000	3.0									
74	6	21	13015	N11 E30	288	800	2.5									
74	6	22	13015	N11 E17	291	1000	3.0									
74	6	23	13015	N11 E05	290	800	3.5									
74	6	24	13015	N11 W08	290	800	3.5	19422	N11 W11	292	(BF)	2	R	0	2	AXX
74	6	25	13015	N11 W23	291	900	3.0	19422	N10 W24	292	(AF)	2	R	0	1	AXX
74	6	26	13015	N12 W37	292	900	3.0									
74	6	27	13015	N12 W50	292	900	3.0									
74	6	28	13015	N12 W64	292	900	3.0									
74	6	29	13015	N12 W77	293	600	2.0									

MCMATH REGION 13023 CMP DATE 24.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	22	13023	N40 E20	288	200	1.5									

MCMATH REGION 13034 CMP DATE 25.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	25	13034	S23 W07	275	200	3.0									
74	6	26	13034	S23 W19	274	100	1.0									

MCMATH REGION 13021 CMP DATE 25.5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	21	13021	S20 E50	268	100	1.0									

MCMATH REGION 13032 CMP DATE 25.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	24	13032	N44 E18	264	100	1.5									

REGIONS OF SOLAR ACTIVITY

JUNE 1974

MCMATH REGION 13024 CMP DATE 26.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	22	13024	N33 E46	262	100	1.5									
74	6	23	13024	N33 E34	261	100	1.0									

MCMATH REGION 13022 CMP DATE 26.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	21	13022	N02 E60	258	100	1.0									

MCMATH REGION 13028 CMP DATE 26.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	23	13028	S11 E38	257	100	1.0									
74	6	24	13028	S11 E24	258	200	2.0	19423	S10 E22	259	(BP)	2	R	0	1	AXX
74	6	25	13028	S11 E10	258	100	1.5									

MCMATH REGION 13039 CMP DATE 26.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	27	13039	N01 W08	250	100	1.5									
74	6	28	13039	N01 W22	250	100	1.0									

MCMATH REGION 13029 CMP DATE 27.2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	23	13029	S01 E49	246	200	1.0									

MCMATH REGION 13040 CMP DATE 27.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	27	13040	S11 E04	238	100	1.5	19425	S11 E01	238	X					
74	6	28	13040	S11 W11	239	100	1.5									

MCMATH REGION 13025 CMP DATE 28.6

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	6	22	13025	N07 E81	227	300	2.5									
74	6	23	13025	N07 E69	226	200	2.0									
74	6	24	13025	N07 E54	228	300	1.5									
74	6	25	13025	N07 E39	229	100	1.0									
74	6	26	13025	N06 E28	227	200	1.0									
74	6	27	13025	N06 E14	228	100	1.0									

MCMATH REGION 13408 CMP DATE 30.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
74	7	2	13048	S48 W37	207	100	1.0									

REGIONS OF SOLAR ACTIVITY

JUNE 1974

MCMATH REGION 13041 CMP DATE 30.1

			CALCIUM PLAGE DATA					SUNSPOT DATA						
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H STA AREA CNT CLASS
74	6	28	13041	N17	E20	208	200	2.0						

The column marked STA is inserted to indicate the source of data for sunspot area, count and classification.
B = Boulder M = Manila R = Ramey

Note:

Region 12977 is probably mostly new plage that has developed following the location of old region 12915 of the previous rotation.
Region 12990 formed on the disk near the east limb.
Region 12981 is new plage that has developed near the location of old region 12918.
Region 12015 has developed near the location of old plages 12954 and 12958.

The sun now has an increasing number of very small and ephemeral "regions" (mostly without spots) with very short lifetimes of one day or of only a very few days.

Calcium spectroheliograms were obtained at the McMath-Hulbert Observatory and sunspot observations were made at Mt. Wilson Observatory on every day of June 1974.

DAILY CALCIUM PLAGE INDEX

JUNE 1974

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
74	6	1	23.1	74	6	11	13.7	74	6	21	9.8
74	6	2	25.1	74	6	12	11.5	74	6	22	11.0
74	6	3	33.1	74	6	13	10.6	74	6	23	9.3
74	6	4	32.9	74	6	14	13.7	74	6	24	7.9
74	6	5	32.1	74	6	15	15.6	74	6	25	7.2
74	6	6	27.8	74	6	16	15.4	74	6	26	7.1
74	6	7	26.6	74	6	17	14.3	74	6	27	8.8
74	6	8	23.0	74	6	18	13.2	74	6	28	12.0
74	6	9	15.6	74	6	19	12.0	74	6	29	14.6
74	6	10	16.4	74	6	20	11.6	74	6	30	18.7

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1974

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
01	0659	0730	0700	1-	3			1	1		1		0657	12977
01	0829	0900	0833	1-	1						1		0829	12977
01	1150	1300	1200	1-	3				1		1		1153E	12977
01	1545	1620	1550	1-	5				1		4		1540	12977
02	0043	0204	0052	1-	5	1		1	3		2		*	
02	0425	0555	0427	2-	5	2			2		2		0420	12977
02	2211	2307	2212	1-	5				2		7		2210E	12977
03	1958	2038	2005	1-	5	1			1		5		1953	12972
													1951	12977
04	0010	0200	0016	2-	5	3			3		4		0008	12972
04	1117	1155	1125	1-	1				1				1117	12977
05	1650	1720U	1656	1-	1	1							1648	12972
06	1422	1455	1430	1-	3	1			1		1		1420	12972
06	1538	1630	1547	1	5	5	1	2	3		12		1535	12972
07	0916	0942	0932	1+	1	1							0914	12972
09	1458U	1530	1510	1-	1			1					1455	12981
11	1117U	1206	1127	1-	1			1					1115	12993
11	2117	2300U	2130U	1-	1						1		2116E	12981
12	1133U	1220	1143	1-	1		1						1123E	12995
14	1419	1445	1425	1-	5	1		1	1		6		1419	12993
20	1340	1409	1346	1-	1			1					1340	13002
21	1808	1820	1811	1-	1	1							1805	13002
23	0516	0722	0552	1	3	1		1	1				0516	13002
23	0535	0634	0546	1+	5	3	1	1	3		2		0528E	13002
24	1224U	1240	1232	1-	1			1					1226	13030
24	2002	2115	2020	1-	5	1			1		7		NF	
27	2112	2142	2114	1-	1				1				*	
29	0643U	0740	0647	1-	1			1					0643E	13043
29	1124	1140	1130	1-	1				1		1		1128	13043
29	1505	1640	1515	1	5	3		1	4	1	11		1457	13043
29	2103	2140	2107	1-	1						1		2103E	13043
30	0231	0418	0238	1-	3	1			2				0233E	13043
30	0707	0800	0718	2	5	4	1	2	3		2		0709E	13043
30	1943	2100	2004	1-	1	1					1		1941	13043
30	2223	0056	2232	2	5	4			4	1	8		2223	13043
30	2247	2350	2252	1+	3		1		6				NF	

STATIONS REPORTING FOR JUNE 1974

AAVSO (A1) (SEA) (A1, A19, A21, A26, A29, A30, A31, A33, A35, A36, A37, A38) (SES) (A31, A38) (SWF)
BOULDER (BO) (SCNA, SEA)
DARMSTADT (DA) (SWF)
DEBRE ZEIT (DE) (SPA)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SFA)
HUANCAYO (HU) (SWF)
INURO (IN) (SPA)
JOHANNESBURG (JH) (SPA)
KASUAGI (KA) (SPA)
KUHLUNGSBORN (KU) (SWF, SPA)
KULA, MAUI (KL) (SPA)
MANILA (MA) (SWF, SPA)
MCMATH (MC) (SWF, SCNA)
NEUSTRELITZ (NU) (SWF, SCNA)
NEW DELHI (ND) (SWF)
PANSKA VES (PU) (SWF, SEA, SES)
POITIERS (PO) (SEA)
PRESTON (LO) (SEA)
SAO PAULO (UM) (SPA, SES)
SOFIA (SF) (SES)
ST. CLOUD (SC) (SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
UPICE (UI) (SEA)

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1974

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
01-31	0935-2355 A21 (22 kHz), 2355-0935 A21 (24 kHz)
01	0728-1203 UM (16 kHz)
02-03	0000-2400 KA
02	1950-2400 UM (16 kHz)
03-11	0600-1800 A35 (22 kHz)
03	0000-0335 UM (16 kHz), 0707-1414 UM (16 kHz), 1634-1744 TM, 2010-2052 TM
04	0734-0944 UM (16 kHz), 1007-1335 UM (16 kHz)
05	0740-0930 UM (16 kHz), 0750-0945 UM (13 kHz), 1119-1213 UM (13 kHz), 1314-1330 UM (13 kHz), 1420-1510 UM (13 kHz)
06	0738-0835 UM (16 kHz)
07	0738-0817 UM (16 kHz), 1403-1648 UM (17 kHz), 1453-1457 TM, 2220-2236 TM
08	0737-0829 UM (16 kHz)
09	0000-2400 A37, 0753-1034 UM (16 kHz), 1145-1234 UM (16 kHz)
10	0741-0950 UM (16 kHz), 2037-2300 UM (16 kHz)
11	0210-0615 UM (13 kHz), 0745-0942 UM (16 kHz), 0934-1010 UM (13 kHz), 1006-1220 UM (16 kHz), 2057-2302 UM (16 kHz))
12	0735-1136 UM (16 kHz), 2057-2150 UM (16 kHz)
13	0737-1155 UM (16 kHz), 1804-1810 TM
14	0000-2400 A26, 1358-1710 UM (17 kHz), 1423-1519 UM (13 kHz), 1706-1810 TM, 2058-2400 UM (16 kHz)
15	0000-2400 A26, 0000-0033 UM (16 kHz), 0257-1554 BO, 0740-1203 UM (16 kHz), 1600-1606 MC, 2056-2313 UM (16 kHz)
16	0745-0820 UM (16 kHz)
17	0000-2400 A29, 0700-1525 TM (intermittent), 0747-0828 UM (16 kHz), 2058-2311 UM (16 kHz)
18	0000-2400 A29, 0050-0314 BO, 0735-0820 UM (16 kHz), 1007-1239 UM (16 kHz), 1247-1334 UM (16 kHz), 1523-1705 UM (17 kHz), 2025-2126 UM (17 kHz), 2057-2224 UM (16 kHz)
19	0736-0834 UM (16 kHz)
20	0732-0914 UM (16 kHz), 2057-2226 UM (16 kHz)
21	0730-0822 UM (16 kHz), 1355-1715 UM (17 kHz), 1718-1742 TM
22	0730-0817 UM (16 kHz), 2058-2217 UM (16 kHz)
23	0000-2400 BO, 0732-0840 UM (16 kHz), 2057-2205 UM (16 kHz)
24-31	1730-2400 A33 (34 kHz)
24	0000-2400 A19, 2035-2100 BO
25	0740-1335 UM (16 kHz)
26	0710-1350 TM, 0745-0920 UM (16 kHz)
27	0000-2400 A19, 0744-0831 UM (16 kHz), 2029-2240 UM (16 kHz)
28	0751-0825 UM (16 kHz), 1355-1722 UM (17 kHz)
29	0735-1305 UM (16 kHz)
30	0000-2400 A19, 2100-2250 UM (16 kHz)

SID's BY McMATH REGION

DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
REGION																														
72			1	1	1	2	1																							
77	4	2	1	1																										
81									1		1																			
93											1			1																
95												1																		
02																				1	1		2							
30																									1					
43																													4	4
X-RAY																														
UNKNOWN		1																						1						1
NO FP																											1			

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1974

JUN 1974	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
01	0000	1011	MANI													
	0000	0230	BOUL													
	0000	0730	CULG							0243	0631					IIIN,W
	0346	1114	WEIS													
			CULG							0514		1				IIIB,U
	0517	1811	DURN													
			CULG							0604.5	0609	1				IIIGG,V,U
	0913	2409	SGMR													
	1224	1905	WEIS													
	2129	2400	MANI													
	2030	2400	CULG							2142	2143	2				IIIG,V
	1130	2400	BOUL							2147.6	2148.2	1	2147.6	2148.2	1	III
			BOUL							2212.5	2212.8	1	2212.5	2212.8	1	III
			CULG							2212.5		1				IIIB
02	0000	0730	CULG				0042	0045.5		0043						IIIG,W
			CULG							0046.5	0049.5	2				IIIG,V,U
	0000	0230	BOUL							0046.9	0049.0	2	0046.9	0049.0	2	IIIG
	0000	1005	MANI										0047.8	0049.1	1	III
			CULG				0049		1							IIIB
			MANI										0151.6	0205.5	2	III
			CULG							0303		1				IIIB,U
			CULG				0424.5	0425	1	0422.5	0425	1				IIIG
	0350	1645	WEIS							0425.4	0428.3	3				III,VG
			CULG				0425.5	0428	2	0425.5	0434	2	0425.5	0428.5	2	IIIGG,V
			MANI										0425.5	0433.6	2	V
			CULG										0427	0433	1	S.W.F.
			CULG				0430.5	0433	1	0431	0433	1				IIIG
	0517	1811	DURN													
			CULG				0521	0522								IIIG,W
			WEIS							0735.7	0736.8	1				IIIG
			WEIS							0739.1	0740.0	1				IIIG
			WEIS							0906.3	0908.3	2				IIIGG
	1130	2400	BOUL							1630.6	1631.7	2	1630.6	1631.7	2	IIIG
			WEIS							1630.7	1631.5	2				IIIG
	0913	2410	SGMR										1630.8	1631.6	2	III
	2129	2400	MANI													
	2030	2400	CULG							2222	2223	1				IIIG,U
			BOUL							2222.0	2222.7	2	2222.0	2222.7	2	IIIG
			CULG							2309	2344					IIIN,W
			CULG							2326	2327	1				IIIG
			BOUL										2326.0	2327.2	1	IIIG
			CULG							2335	2342	1				IIIG
			BOUL										2336.0	2336.2	1	III
			BOUL							2341.5	2341.7	1	2341.5	2341.7	1	III
03	0000	1007	MANI													
	0000	0730	CULG							0100	0552					IIIGN,W
	0000	0230	BOUL										0106.7	0107.0	1	III
			BOUL										0131.9	0133.5	1	III
			CULG							0133	0135.5	1				IIIGG,V
	0516	1809	DURN													
			CULG							0534.5	0536	1				IIIG
	0912	2414	SGMR													
	1031	1908	WEIS													
	2129	2400	MANI													
	2030	2400	CULG				2137		1							IIIB
			CULG							2257		1				IIIB
			CULG							2317	2325.5	1	2317	2321	1	IIIGG
	1130	2400	BOUL							2317.0	2324.1	2	2317.0	2324.1	2	IIIGG
04	0000	0135	CULG				0009.5	0016	1	0009	0016	2	0011	0014	2	IIIGG,V
	0000	0230	BOUL							0009.6	0016.8	3	0009.6	0016.8	3	IIIG
	0000	1007	MANI										0010.2	0013.0	3	IIIG
	0912	2412	SGMR										0012.0	0012.9	2	III
			CULG										0014	0022		WEAK
			CULG							0020	0048	2				IIH
			CULG							0020	0135	1				IS
			BOUL							0020.8	0041.0	3	0027.5	0046.2	3	II
			BOUL							0021.3	0024.0	3	0020.8	0036.0	3	II
			MANI										0021.3	0026.8	2	II
			MANI										0027.2	0040.8	1	CONT
			MANI										0028.2	0035.3	2	II
			CULG							0030	0055	2				IV
			BOUL							0052.4	0145	1	0052.4	0145	1	IV
			CULG							0055	0133	1				IV
	0218	0730	CULG							0331	0332	1				IIIG
			CULG							0340	0345	1				IIIG
	0352	1450	WEIS													
			CULG							0409	0413					I,W
	0516	1700	DURN													
			CULG							0613		1				IIIB
	1130	2400	BOUL													
	1511	1902	WEIS													
	2129	2400	MANI													
	2030	2400	CULG				2323.5	2324.5	1	2323	2325	1				IIIG
			CULG							2328		1				IIIB
05	0000	0230	BOUL													
	0000	1013	MANI													

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1974

JUN 1974	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
05	0000	0730	CULG							0044		1					IIIB
			CULG							0118	0119	1					IIIG
			CULG							0306		1					IIIB
	0349	1828	WEIS														
			CULG							0538		1					IIIB
	0803	1811	DURN														
	1130	2400	BOUL										1318.1	1318.3	1		III
			BOUL										1329.5	1330.0	1		III
			BOUL										1504.0	1504.4	1		III
			BOUL										1519.7	1519.9	1		III
	0911	2412	SGMR										1526.0	1526.3	1		III
			SGMR										1551.8	1552.0	1		III
			BOUL										1708.5	1710.0	1		III
			BOUL							1819.3	1819.6	1	1819.3	1819.6	1		III
	1831	1904	WEIS														
			BOUL										1905.8	1908.0	1		IIIG
			BOUL							1953.4	1955.0	2	1953.4	1955.0	2		IIIG
			SGMR										1953.5	1954.0	2		III
			BOUL							2022.5	2022.8	2	2022.5	2022.8	2		III
			SGMR										2022.7	2023.0	1		III
			BOUL										2035.3	2036.2	1		IIIG
			BOUL										2039.8	2040.6	1		IIIG
			BOUL										2048.6	2048.9	1		III
			BOUL							2058.6	2058.9	1	2058.6	2058.9	1		III
	2030	2400	CULG							2117	2118						IIIG,W
			CULG							2126	2136						IIIG,W
	2129	2400	MANI														
			BOUL										2237.3	2237.5	1		III
06	0000	0230	BOUL														
	0000	1013	MANI														
	0000	0730	CULG							0056	0220						IIIN,W
			CULG				0100	0100.5	1								IIIG
			CULG							0220	0252						IIIS,W
			CULG							0252	0655						IIIN,W
	0911	2413	SGMR										1131.8	1132.0	1		III
			SGMR										1245.0	1245.2	1		III
	1300	2400	BOUL							1308.7	1314.5	1					IIIG
			SGMR										1309.0	1314.0	2		IIIG
	0340	1904	WEIS							1309.4	1313.3	1					IIIG
			WEIS							1335.4	1335.6	1					IIIG
			BOUL										1335.5	1335.9	1		III
			SGMR										1335.5	1335.8	2		III
			WEIS							1525.7	1526.2	1					IIIG
			SGMR										1525.9	1526.2	1		III
			BOUL							1538.6	1544.8	3	1538.6	1544.8	3		IIIG
	0517	1810	DURN							1538.7	1542.1	3					IIIGG
			WEIS							1538.7	1541.5	3					IIIGG,U
			SGMR										1539.0	1545.5	3	IV	
			WEIS							1539.4	1542.7	2					V
			WEIS							1546.9	1547.0	1					IIIB
			BOUL							1553.0	1555.9	1	1554.1	1600.5	1	II	
			SGMR										1553.8	1555.8	2	II	
			BOUL							1555.5	1606.5	2	1603.5	1622.3	2	II	
			SGMR										1604.9	1608.4	2	II	
			SGMR										1610.8	1613.0	2	II	
			SGMR										1619.0	1621.7	2	II	
			BOUL							1940.9	1941.6	1	1940.9	1941.6	1		III
			SGMR										1941.4	1941.7	1		III
	2030	2400	CULG				2100	2117	1								IS
			CULG							2104	2400	1					IS
	2129	2400	MANI														
			CULG							2132	2400						IIIN,W
			CULG							2151.5	2156.5	2					IIIGG
			BOUL							2151.9	2156.5	2	2151.9	2156.5	2		IIIG
			CULG				2201	2202	1	2201	2204	2					IIIGG
			BOUL							2201.5	2203.2	1	2201.5	2203.2	1		IIIG
			CULG							2345	2346	2	2345.5	2346	1		IIIG
			BOUL							2345.5	2346.0	2	2345.5	2346.0	2		III
07	0000	0230	BOUL														
			CULG							0000	0634						IIIN,W
	0000	0731	CULG							0000	0705	1					IS
	0000	1012	MANI														
			CULG							0335	0345	1					IIIGG
	0339	0553	WEIS														
			CULG				0423	0643	1								IS,W
	0517	0749	DURN														
			CULG							0612	0615	1					IIIGG
			CULG							0619.5		1					IIIB
	0710	1907	WEIS							0900.8	0901.0	1					IIIB
			WEIS							0959.1	1001.3	1					IIIG
	0945	1812	DURN							1105	1812	1					IS
	1130	1300	BOUL														
	1600	2400	BOUL							1801.0	1802.2	2	1801.0	1802.2	2		III
	0911	2414	SGMR										1801.3	1801.7	2		III
			BOUL										1841.3	1841.4	1		III
			BOUL							2001.1	2001.3	2	2001.1	2001.3	2		III
			SGMR										2001.3	2001.6	2		III
	2030	2400	CULG				2058	2135	1	2058	2400	1					IS

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				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
07			CULG							2111	2400					IIIN,W
	2129	2400	MANI													
			CULG				2135	2400	1							IS,W
			CULG							2222.5		1				RS,OP
			CULG							2316		1				RS,OP
08	0000	0730	CULG							0000	0335	2				IS,OC
			CULG							0000	0730					IIIN,W
			CULG				0000	0730								IS,W
			CULG							0101		1				RS,OP
			CULG							0110	0116	2	0110	0111	1	IIIGG
	0000	0230	BOUL							0110.0	0115.9	2	0110.0	0115.9	2	IIIG
	0000	1012	MANI										0110.4	0110.6	2	III
			CULG							0117.5	0120	2				IIIGG
			BOUL							0118.6	0120.1	2	0118.6	0120.1	2	IIIG
			BOUL							0122.9	0123.1	1	0122.9	0123.1	1	III
			CULG							0313.5	0315	2	0313.5	0315	2	IIIG,V
			MANI										0313.8	0314.4	3	III
	0329	1142	WEIS													
			CULG							0335	0730	1				IS
	0517	1810	DURN							0532	0630	1				IS
	1159	1909	WEIS													
	1130	1430	BOUL										1351.1	1355.0	1	III
			BOUL							1412.0	1415.0	1	1412.0	1415.0	1	III
	0910	2414	SGMR										1412.1	1413.1	1	III
	2030	2400	CULG							2100	2400	1				IS
			CULG							2110	2400					IIIN,W
	2129	2400	MANI													
09	0000	0032	MANI													
	0000	0730	CULG							0000	0630	1				IS
			CULG							0000	0534					IIIN,W
	0042	1010	MANI													
	0517	1455	DURN													
	0329	1535	WEIS							0707.5	0708.1	1				IIIG
	0910	2415	SGMR										1630.5	1631.9	1	III
	1540	1910	WEIS							1700.3	1701.5	1				IIIG
			WEIS							1706.6	1707.8	1				IIIG
			SGMR										1735.8	1736.0	1	III
			SGMR										1753.8	1754.1	1	III
			SGMR										1853.7	1905.7	2	IIIG
	2030	2400	BOUL							2035.8	2040.0	2	2035.8	2040.0	2	III
	2030	2400	CJLG							2055	2400					IIIN,W
			CULG							2105	2400	1				IS
			CULG				2106.5	2107.5	1	2106.5	2108.5	2				IIIG,V,U
	2129	2400	MANI													
			CULG							2135	2140	2				IIIGG,U
			SGMR										2138.6	2139.2	2	III
10	0000	0731	CULG							0000	0731	1				IS
			CULG							0000	0731	1				IIIGN
			CULG							0041	0044	1				IIIG,U
	0000	0230	BOUL							0041.7	0043.3	1	0041.7	0043.3	1	IIIG
			BOUL							0126.4	0126.5	1				III
			CULG							0240.5	0242	2				IIIG
	0000	1010	MANI										0329.0	0331.3	3	IIIG
			CULG							0338	0347	2				IIIGG,V
	0331	1911	WEIS							0339.9	0341.0	1				IIIG
			CULG							0418	0419	2				IIIG,V,U
			WEIS							0418.2	0418.7	1				UNCLF
			CULG							0443		2				IIIB
			WEIS							0443.1	0443.2	1				IIIG
			CULG							0506	0507	1				IIIG,V,U
			WEIS							0506.5	0506.8	1				IIIG
			MANI										0510.1	0512.2	3	IIIG
			CULG							0511	0514	2				IIIGG,V
			WEIS							0511.2	0513.4	3				IIIGG
			WEIS							0922.4	0922.6	1				IIIB
	0910	2415	SGMR										1147.6	1147.8	1	III
	1130	2400	BOUL							1236.5	1451.5	2	1236.5	1451.5	2	IIIN
			SGMR										1255.9	1258.1	1	IIIG
			WEIS							1257.8	1257.9	1				IIIB
			WEIS							1324.5	1326.4	2				IIIG
	0807	1812	DURN				1325.8	1326.3	2	1325.6	1326.4	3				IIIG
			SGMR										1326.0	1329.3	2	IIIG
			WEIS							1329.0	1329.1	1				IIIB
			DURN							1348.7	1348.9	3				IIIG
			WEIS							1404.0	1404.2	2				IIIB
			SGMR										1404.1	1411.4	2	IIIG
			WEIS							1408.5	1410.3	3				IIIG
			DURN							1408.8	1410.3	3				IIIG,RS
			SGMR										1432.8	1436.8	1	IIIG
			DURN							1433.2	1433.2	2				IIIB
			WEIS							1450.7	1451.0	1				IIIG
			SGMR										1450.9	1451.2	1	III
			BOUL							1614.9	2111.3	2	1614.9	2111.3	2	IIIN
			SGMR										1615.0	1646.4	2	IIIG
			WEIS							1626.1	1626.7	1				IIIG
			SGMR										1715.0	1715.3	1	III
			SGMR										1742.8	1744.5	3	III

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				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
10			WEIS							1742.8	1744.3	3					III,V,G
			DURN				1742.8	1743.8	2	1742.9	1743.3	3					IIIG
			SGMR										1827.1	1833.6	1		IIIG
			SGMR										1948.4	2011.8	1		IIIG
	2031	2400	CULG							2104	2400	1					IS
			CULG							2110	2111.5	1					IIIG
			SGMR										2110.8	2111.3	1		III
	2129	2400	MANI														
			CULG							2147	2400	1					IIIN
			BOUL										2227.9	2229.2	1		IIIG
			CULG				2234	2234.5	1	2234	2234.5	2					IIIG
			BOUL							2234.1	2234.5	2	2234.1	2234.5	2		III
			CULG							2240	2245	1					IIIGG
			BOUL							2240.5	2242.5	2	2240.5	2242.5	2		IIIG
			CULG							2320	2335						IIIGG,W
			BOUL							2320.5	2335	1	2320.5	2335	1		CONT
11	0000	0230	BOUL														
			CULG							0000	0637	1					IIIN
	0000	0637	CULG							0000	0637	1					IS
	0000	1010	MANI										0245.5	0245.7	1		III
			CULG							0246.5		2					IIIB
	0332	0410	WEIS														
			CULG							0415	0419	2					IIIG
			MANI										0417.6	0417.9	1		III
			MANI										0459.2	0501.0	1		IIIG
			CULG				0500	0500.5	1	0459	0502	2					IIIGG
	0518	1810	DURN														
	0749	1911	WEIS							0749.9	1623.0	1					IN
	1225	1540	DWIN				1225	1540	1	1225	1540	1					I
			DWIN							1522.3	1522.5	2					IIIG
	1130	2400	BOUL							1559	1641	1	1559	1641	1		CONT
	0910	2416	SGMR										1602.8	1605.2	2		IIIG
			BOUL							1608	1635	1					IS
			SGMR										1616.7	1617.3	1		III
			BOUL							1805	2400	1	1805	2400	1		CONT
			BOUL							1815	2125	1					IS
			SGMR										1853.0	1853.3	1		III
	2112	2400	CULG				2112	2400	1	2112	2400	2					IS
			CULG							2112	2400	1					IIIS
	2129	2400	MANI														
12	0000	0645	CULG				0000	0645	1	0000	0645	2					IS
			CULG							0000	0645	1					IIIS
	0000	0230	BOUL										0000	0023	1		CONT
	0000	1010	MANI										0057.9	0058.1	1		III
			BOUL							0058.7	0059.9	2	0058.7	0059.9	2		III
			CULG							0059	0100	2					IIIG,V,U
			CULG							0240.5		2					IIIB,U
			MANI										0401.0	0401.3	1		III
	0332	1031	WEIS							0508.8	1704.0	2					IN
	0517	1812	DURN							0709.8	1812	2					IN,DC
	0939	1524	DWIN				0939	1524	1	0939	1524	1					I
	1130	2400	BOUL										1226.3	1227.4	1		IIIG
			BOUL							1332.3	1653.5	2	1332.3	1653.5	2		IIIN
	0910	2416	SGMR										1401.8	1402.5	2		III
			SGMR										1420.2	1424.7	2		IIIG
			SGMR										1508.0	1515.8	2		IIIG
			SGMR										1559.2	1559.4	1		III
			BOUL							1606.9	1610.0	3	1606.9	1610.0	3		III
	1037	1912	WEIS							1606.9	1609.5	1					IIIGG
			SGMR										1607.0	1609.9	3		III
			SGMR										1649.8	1653.1	1		IIIG
			WEIS							1651.8	1652.0	1					IIIG
			BOUL										1837.8	1838.1	1		III
			BOUL										1945	2035	1		CONT
			BOUL										2106.1	2106.2	1		III
	2058	2400	CULG							2113		1					IIIB
			BOUL							2113.6	2113.7	1	2113.6	2113.7	1		III
			BOUL										2116.1	2400	1		IIIN
			CULG				2117	2400	1	2117	2400	1					IS
			CULG							2124	2400	1					IIIN
	2130	2400	MANI														
			CULG							2141		1					IIIB,U
13	0000	0712	CULG				0000	0710	1	0000	0330	1					IS,OC
			CULG							0000	0330	1					IIIN
	0000	0230	BOUL										0000	0159.2	1		IIIN
	0000	0955	MANI														
			CULG							0330	0710	2					IS,OC
			CULG							0330	0710	2					IIIS
	0334	1505	WEIS							0402.7	1030.0	3					I
	0518	1812	DURN							0518 E	1812	2					IN,DC
			CULG							0624	0625	2					IIIG,V
			WEIS							1237.0	1501.0	2					I
	1455	2400	BOUL										1459.3	1500.2	1		IIIG
	0910	2417	SGMR										1459.8	1500.2	2		III
			BOUL										1524.1	1525.7	1		IIIG
			BOUL										1540.7	1541.5	1		III
			BOUL										1655.9	1656.3	1		III

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				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
13	1659	1912	WEIS													
			BOUL										1848.5	1849.0	1	III
			BOUL										2013.3	2046.2	1	IIIN
	2058	2400	CULG				2101.5	2400	1	2101.5	2400	2				IS
			CULG							2106	2400	1				IIIS
			BOUL							2113	2400	1				IS
	2130	2400	MANI													
			BOUL										2145	2400	1	CONT
14	0000	0230	BOUL							0000	0030	1				IS
			CULG							0000	0656	1				IIIS
	0000	0703	CULG				0000	0150	1	0000	0703	1				IS
			BOUL							0003.0	0158.7	1	0003.0	0158.7	1	IIIN
			CULG							0424	0425	2				IIIG
	0000	0955	MANI										0424.5	0424.6	1	III
	0456	1553	DURN													
			CULG							0502	0503	2				IIIG
	0334	1911	WEIS							0502.2	0502.3	1				IIIB
			MANI										0502.3	0502.6	1	III
			WEIS							0513.7	0651.0	2				I
	1141	1407	DWIN				1141	1407	1	1141	1407	1				IN
	1130	1400	BOUL										1233.2	1233.5	1	III
			BOUL										1302.0	1302.4	1	III
			DWIN				1304.6	1306.0	2							IIIG
			BOUL										1322.0	1322.4	2	III
	0910	2417	SGMR										1322.2	1324.7	1	IIIG
			BOUL										1324.5	1325.0	1	III
			BOUL										1347.5	1347.9	1	III
			BOUL							1358.8	1359.1	2	1358.8	1359.1	2	III
			SGMR										1442.0	1442.3	2	III
	1655	1810	DURN													
			BOUL							1700	2400	2	1700	2400	2	IIIN
	1700	2400	BOUL										1700	2400	1	CONT
			SGMR										1837.6	1838.0	1	III
			SGMR										1933.5	1934.2	2	III
			SGMR										2042.7	2043.1	1	III
	2057	2400	CULG				2102	2110	1	2101	2400	1				IS
			CULG							2103	2400	1				IIIS
	2130	2400	MANI													
15			CULG							0000	0653	1				IIIS
	0000	0703	CULG							0000	0703	1				IS
	0000	0230	BOUL										0000	0115	1	CONT
			CULG							0515	0516	2				IIIG,V
	0335	0555	WEIS							0515.0	0515.3	1				IIIG
	0000	0955	MANI										0515.3	0515.7	3	III
			CULG							0639.5	0642.5	2				IIIGG
	0455	1812	DURN							0722.6	1200	2				IN,OC
	0850	1912	WEIS													
	1130	2400	BOUL							1244	1600	1	1244	1600	1	CONT
	0910	2418	SGMR										1258.1	1259.3	2	III
			BOUL							1258.3	1259.5	2	1258.3	1259.5	2	III
			SGMR										1502.5	1502.7	1	III
			BOUL										1742.8	1744.2	1	IIIG
			BOUL							1752.8	1758.4	2	1752.8	1758.4	2	IIIGG
			SGMR										1753.8	1758.0	2	IIIG
			SGMR										1807.7	1808.0	1	III
			BOUL										1807.7	1808.7	2	IIIG
			BOUL										1811.7	1812.1	1	III
			BOUL										1816.1	1816.5	1	III
			BOUL										1949.3	1949.6	1	III
	2055	2400	CULG							2104	2400	1				IS
			CULG							2109	2400	1				IIIS
	2130	2400	MANI													
			BOUL										2352.8	2353.0	1	III
16	0000	0230	BOUL													
			CULG							0000	0712	1				IIIS
	0000	0712	CULG							0000	0712	1				IS
			CULG							0319.5	0320.5	2				IIIG,V,U
			CULG				0409.5	0410	1	0409	0411	2				IIIG,V,U
	0433	1310	WEIS							0409.5	0409.8	2				IIIG,U
	0000	0955	MANI										0409.6	0410.5	1	IIIG
			WEIS							0554.8	0810.0	1				I
			DURN							0628	1811	2				IN,OC
			WEIS							0707.3	0707.8	2				IIIG
	0455	1811	DURN				0707.4	0707.4	1	0707.4	0707.7	2				IIIG
	0910	2418	SGMR													
	1130	2400	BOUL										1538.8	1539.0	1	III
			BOUL										1709.9	1710.5	1	III
			CULG							2106	2400	1				IIIS
	2058	2400	CULG							2106	2400	1				IS
	2131	2400	MANI													
			BOUL							2144.4	2144.5	1				III
			BOUL							2200	2250	1	2200	2250	1	CONT
			CULG							2352.5	2354.5	2				IIIGG,V,U
			BOUL							2353.0	2354.2	2	2353.0	2354.2	2	IIIG
17	0000	0652	CULG							0000	0652	1				IS
			CULG							0000	0652	1				IIIS

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1974

JUN 1974	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
17	0000	0955	MANI														
	0000	0230	BOUL										0018.2	0018.6	1		III
			BOUL										0024.5	0024.7	1		III
			CULG				0435.5	0436.5	1	0435.5	0437	2					IIIGG,V,U
	0455	1810	OURN							0530	0910	2					IN,C,DC
	0747	0832	OWIN				0747	0832	1	0747	0832	1					IC
			OWIN							0816.3	0816.6	2					IIIG
	0946	1913	WEIS							0954.2	0954.3	1					IIIB
	1130	2400	BOUL										1145	1600	1		III
			WEIS							1349.6	1350.0	2					IIIG
	0910	2419	SGMR										1349.7	1350.3	2		III
			BOUL							1349.8	1351.0	2	1349.8	1351.0	2		IIIG
			BOUL										1732.8	1733.0	1		III
			BOUL							1800	2145	1					IS
			BOUL							1846.4	1847.9	3	1846.4	1847.9	3		III
			WEIS							1846.5	1846.6	1					IIIB
			SGMR										1846.6	1847.8	3		III
	2057	2400	CULG							2104	2400	1					IS
			CULG							2120	2400						IIIN,W
	2131	2400	MANI														
18			CULG							0000	0706						IIIN,W
	0000	0706	CULG							0000	0706	1					IS
			CULG				0121	0122	1	0121	0122.5	2					IIIG,V,U
	0000	0230	BOUL							0121.3	0122.3	3	0121.3	0122.3	3		III
	0000	0955	MANI										0121.4	0122.1	2		III
			CULG							0452.5	0455	2					IIIG,U
	0455	1812	OURN							0545	0550	2					IDC
			OURN							0703.4	0703.5	2					IIIG
			CULG							0703.5	0704.5	1					IIIG,U
	0335	1922	WEIS							0703.5	0704.3	2					IIIG
			MANI										0703.9	0704.4	2		III
			WEIS							0706.0	0706.5	1					IIIG
			WEIS							0852.4	0853.2	1					IIIG
			OURN				0853.3	0858.8	2	0852.4	0859.8	2					IIIGG
			WEIS				0856.6	0856.7				1					IIIG
			WEIS							0858.4	0859.8	1					IIIG
	0910	2419	SGMR														
			OURN							1109	1701	1					IN,DC
	1130	2400	BOUL														
	2054	2400	CULG							2102	2400	1					IS
			CULG							2112	2400	1					IIIS
	2131	2400	MANI														
19	0000	0955	MANI														
	0000	0707	CULG							0000	0707	1					IS
			CULG							0000	0644	1					IIIS
	0000	0230	BOUL														
			CULG							0314.5	0315	2					IIIG,U
	0325	0805	WEIS														
	0455	0756	OURN														
	0806	1812	OURN														
	0934	1552	OWIN							0934	1230	1					IW
	1130	2400	BOUL							1436.8	1437.6	1	1436.8	1437.6	1		III
	0850	1807	WEIS							1437.2	1437.3	1					IIIG
	0910	2419	SGMR										1437.2	1437.6	2		III
			BOUL							1601.8	1602.0	1	1601.8	1602.0	1		III
			SGMR										1601.9	1602.1	1		III
	1854	1927	WEIS														
	2055	2400	CULG							2105.5	2230	1					IS
			BOUL							2111.6	2112.0	2	2111.6	2112.0	2		III
			SGMR										2111.7	2112.1	1		III
			CULG							2142.5							IIIB,W
			CULG				2202	2204.5	1	2203	2204.5	1					IIIG,U
			CULG				2230	2400	1	2230	2400	1					IS,CONT
			CULG							2230	2400	1					SCINT
			BOUL							2248.8	2256.5	1					IIIGG
			BOUL							2248.8	2300	1				IV	
			BOUL										2302.7	2303.0	1		III
			CULG							2309	2329	2				II	
			BOUL							2309.5	2400	1	2309.5	2400	1	IV	
			BOUL							2311.0	2317.0	3	2311.0	2330.2	3	II	
			BOUL										2311.8	2320.5	2	II	
			SGMR										2312.5	2325.5	2	II	
	2131	2400	MANI										2312.6	2320.8	2	II	
			CULG							2332	2333	2					IIIG
			BOUL							2332.3	2332.9	2	2332.3	2332.9	2		III
20	0000	0230	BOUL							0000	0025	1				IV	
	0000	0707	CULG							0000	0024	1					IS,CONT
			CULG							0000	0024	1					SCINT
	0000	0955	MANI														
			CULG							0024	0659	1					IS
			CULG							0056.5	0150	1					IIIN
			CULG							0152	0153.5	1					IIIG,U
			CULG							0204	0649	1					IIIN
	0322	1007	WEIS														
	0456	1810	OURN														
	0741	1404	OWIN														
	0910	2419	SGMR														

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1974

JUN 1974	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
20	1130	2400	BOUL													
	1650	1926	WEIS													
	2132	2400	MANI													
	2055	2400	CULG							2201	2202					IIIG,W
			CULG							2225.5		1				IIIB
21	0000	0707	CULG													
	0000	0230	BOUL													
	0000	0956	MANI													
	0325	1318	WEIS													
	0455	1520	DURN													
	0910	2420	SGMR													
	1130	1400	BOUL													
	1326	1927	WEIS													
	1340	1540	DWIN				1334.0	1436.1	1							IIIGG
	1652	1812	JURN													
	1700	2400	BOUL													
	2055	2400	CULG													
	2132	2400	MANI													
22	0000	0955	MANI													
	0000	0707	CULG													
	0000	0230	BOUL													
	0326	1710	WEIS													
	0456	1812	DURN				0544.2	0544.5	2	0544.2	0544.5	3				IIIG
	0910	2420	SGMR													
	1130	2400	BOUL													
	1719	1927	WEIS													
	2055	2400	CULG													
	2132	2400	MANI													
23	0000	0230	BOUL													
	0456	1810	DURN													
	0000	0623	CULG				0542.5	0545	1	0544.5	0545	1				IIIG
			CULG							0549	0617.5	2				IIH
	0328	1929	WEIS							0558.5	0609.1	2				II
	0000	0955	MANI										0558.6	0604.3	3	II
			MANI										0603.2	0611.5	1	CONT
			MANI										0605.0	0609.5	1	II
	0911	2420	SGMR													
	1130	2400	BOUL													
	2100	2400	CULG													
	2132	2400	MANI													
24	0000	0938	MANI													
	0000	0230	BOUL													
	0330	0517	WEIS													
	0000	0644	CULG							0414	0418.5	2				IIIG
			CULG							0434	0437					IIIG,W
	0455	1812	DURN													
	0703	1930	WEIS													
	0759	1200	DWIN													
	0911	2420	SGMR													
	1130	2400	BOUL													
	2133	2400	MANI													
	2058	2400	CULG							2226		1				IIIB
			CULG							2229		1				IIIB
25	0000	0655	CULG													
	0000	0230	BOUL													
	0000	0956	MANI													
	0332	1125	WEIS													
	0333	0739	DWIN													
	0455	1812	DURN													
	0911	2420	SGMR													
	1130	2400	BOUL													
	1138	1932	WEIS													
	2100	2400	CULG													
	2133	2400	MANI													
26	0000	0955	MANI													
	0000	0646	CULG													
	0000	0230	BOUL													
	0335	1533	WEIS													
	0455	0717	DURN													
	0734	1810	DURN													
	0912	2420	SGMR													
	1130	2400	BOUL													
	1538	1935	WEIS													
	2055	2400	CULG													
	2133	2400	MANI													
27	0000	0834	MANI													
	0000	0230	BOUL													
	0338	1938	WEIS													
	0000	0634	CULG							0418.5	0420	1				IIIG
	0455	1812	DURN													
			CULG							0536.5	0537.5	1				IIIG
	0912	2420	SGMR													
	0913	0955	MANI													

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1974

JUN 1974	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
27	2133	2400	MANI														
	2059	2400	CULG							2138.5		2					IIIB
	1130	2400	BOUL										2138.6	2138.9	1		III
28	0000	0955	MANI														
	0000	0558	CULG							0034.5							IIIB,W
			CULG							0045							IIIB,W
			CULG							0206.5	0207.5	1					IIIG
	0000	0230	BOUL							0206.9	0207.0	1	0206.9	0207.0	1		III
			CULG							0207		1					RS,OP
			CULG							0239.5							IIIB,W
			CULG							0339	0340	1					IIIG
	0340	0415	WEIS														
			CULG							0400							IIIB,W
	0456	1812	DURN														
			CULG							0546.5	0547.5	1					IIIG
	0613	0735	CULG							0638.5	0639.5	1					IIIG,U
			CJLG							0646	0648	2					IIIG,U
	0912	2420	SGMR										1439.3	1441.4	2		III
	0713	1940	WEIS							1439.3	1440.4	2					UNCLF
	1130	2400	BOUL							1439.4	1442.9	2	1439.4	1442.9	2		III
			SGMR										1527.8	1528.1	1		III
			BOUL							1628.9	1630.8	1	1628.9	1630.8	1		IIIG
			BOUL										2053.3	2055.8	2		IIIG
			SGMR										2053.9	2055.8	1		IIIG
	2133	2400	MANI														
	2035	2400	CULG							2149		1					IIIB
			CULG							2214.5	2215.5	1					IIIG
			CULG							2232	2233.5	1					IIIG
			BOUL										2232.5	2233.2	1		IIIG
			CULG							2324.5	2326.5	1					IIIG
			BOUL										2324.6	2326.4	1		IIIG
			CULG							2328	2331	1					IIIGG
			BOUL										2329.1	2330.0	1		IIIG
29	0000	0735	CULG							0018	0021	2					IIIG
	0000	0230	BOUL							0018.1	0019.2	2	0018.1	0019.2	2		IIIG
	0000	0552	MANI										0018.7	0018.9	2		III
			CULG							0125	0126	1					IIIG
			BOUL										0125.4	0125.7	1		III
			BOUL										0129.9	0131.1	1		III
			CULG							0130	0135	1					IIIG
			CULG							0132	0527	1					IIIN
			BOUL										0134.0	0134.4	1		III
			CULG							0213	0218	1					IIIGG
			MANI										0213.8	0214.0	2		III
			BOUL										0213.8	0214.3	1		III
	0342	1113	WEIS														
			CULG							0342	0344	1					IIIG
			MANI										0342.4	0342.8	1		III
	0610	0855	MANI														
			CULG							0625	0627	1					IIIGG
	0905	0956	MANI														
	0456	1810	DURN				1230.3	1230.5	2	1230.3	1230.5	2					IIIG
	1130	2400	BOUL										1419.6	1419.7	1		III
			BOUL							1500.7	1505.9	2	1500.7	1505.9	2		IIIG
	1210	1943	WEIS							1500.8	1502.7	2					IIIG
	0913	2420	SGMR										1500.8	1503.3	2		III
			BOUL							1511.4	1513.2	2	1511.4	1513.2	2		IIIG
			SGMR										1511.7	1512.3	1		III
			DURN				1525.6	1525.6	1	1525.6	1525.6	2					III
			BOUL							1527.4	1530.0	3	1527.4	1530.0	3		IIIG
			WEIS							1527.5	1529.8	3					III,V
			SGMR										1527.7	1532.1	3		IIIG
			BOUL										1531.6	1531.9	2		III
			WEIS							1555.1	1555.3	1					IIIB
			BOUL										1555.2	1556.0	2		III
			SGMR										1555.2	1555.8	2		III
	2133	2400	MANI														
	2035	2400	CULG							2149.5	2340						IIIGN,W
			CULG							2151.5		1					IIIB
			CULG							2243.5	2244.5	2					IIIG,V
			CULG							2254	2301	1					IIIGG
			CULG							2318		1					IIIB
30	0000	0735	CULG							0010	0641						IIIGN,W
			CULG							0012.5	0016	1					IIIGG
	0000	0230	BOUL							0012.7	0015.0	1	0012.7	0015.0	1		IIIG
			CULG							0017	0019.5	1					IIIGG,V
			BOUL							0017.3	0020.1	2	0017.3	0020.1	2		IIIG
			CULG							0023	0028	1					IIIGG
			BOUL							0023.0	0027.2	1	0023.0	0027.2	1		IIIG
			CULG				0207.5	0208	1	0207.5	0208	1					IIIG
			CULG							0227.5	0234	2					IIIGG
			BOUL										0227.9	0230	1	II	
	0000	0956	MANI										0228.4	0231.7	1		IIIG
			CULG							0420.5	0424	2					IIIGG
			CULG							0546.5	0548	2					IIIG
	0455	0912	DURN				0555.1	0559.6	3	0555.1	0559.6	3					IIIGG,RS
			CULG				0559	0600	1								

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1974

JUN 1974	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
30	0343	1344	WEIS				0559.1	0559.7	1							I
			CULG				0707	0708	1							
			OURN				0707.2	0715	3	0709.5	0715	3				IV
			WEIS				0707.3	0712.1	2							IV
			WEIS							0707.5	0707.8	2				IIIB
			CULG							0707.5		1				IIIB
			MANI										0707.6	0707.8	1	III
			CULG				0709.5	0711	1							UNCLF
			WEIS				0716.7	0716.8	1							IIIB,RS
			OURN				0716.7	0716.7	3	0711.9	0716.7	3				IIIG
			WEIS							0753.1	0754.2	2				IIIG
			MANI										0753.9	0754.2	1	III
			WEIS							0803.2	0804.3	1				IIIG
			MANI										0803.3	0804.5	2	IIIG
	0922	1812	OURN													
	1130	2400	BOUL										1336.2	1336.3	1	III
			BOUL							1413.6	1414.0	1	1413.6	1414.0	1	III
	0913	2428	SGMR										1413.7	1414.0	2	III
			BOUL							1753.8	1754.2	1	1753.8	1754.2	1	III
			BOUL							2046.8	2051.1	3	2046.8	2051.1	3	IIIG
	2035	2400	CULG							2135	2400					IIIN,W
			CULG				2223.5	2240	2	2223.5	2244	2	2225	2235	2	IIIGG,V
			BOUL							2223.9	2240.7	3	2223.9	2240.7	3	IIIGG
			SGMR										2225.3	2248.1	2	IIIG
			CULG										2227	2237	1	S.W.F.
			BOUL							2240	2400	1	2240	2400	1	CONT
			CULG				2246.5	2250	1	2247	2252	2	2247	2250	2	IIIGG,V
	2139	2400	MANI										2247.5	2248.0	1	III
			CULG							2317.5	2321	1				IIIGG
			CULG							2330	2400	1				IS
			BOUL							2340	2400	1				IS

The symbols used in connection with the spectral type in describing the important bursts are as follows:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity

Errata: The times of spectral observations listed as occurring at DWIN (Dwingeloo) in April 1974, as shown on pages 102-109 of *Solar-Geophysical Data* 358 - Part I, were actually reported by the Swiss Federal Institute of Technology near Zürich, Switzerland (Durnten).

SELECTED SOLAR EVENTS

JUNE 1974

Culgoora

UT Date 197.4 JUNE	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions		Polarization	Intensity (1-3)		
				Central Dist. ($R_\odot$)	Position Angle (Deg.)				
2	0424	0427	160	0.9	60	0	3)		No observation
			80	1.1	80	0	3)	III GG,V	at 80 MHz.
			43.25	1.7	70	-	3)		
4	0009	0017	160	0.7	180	0	3)		
			80	0.9	180	0	3)	IIIGG,V	Complex
			43.25	0.7	170	-	3)		structure
4	0020	0050	160)			0	2-3)		Complex
			80)	0.8	180	0	3)	II,IV	structure with
			43.25)			-	3)		multiple components around given positions
10	0511	0514	160	0.7	210	0	2)		
			80	1.1	220	0	3)	III GG,V	*
			43.25	1.4	220	-	3)		
18	0120	0124	160	130	0.7	0	2)		
			80	90	0.7	0	2)	IIIG,V,U	
			43.25	30	0.8	-	3)		
19	2312	2318	43.25	320	1.0	-	2	II	Starting frequency below 80 MHz
19/20	2320	0020	80	270	1.1	ℓ	3	IV	No type IV at 160 or 43.25 MHz.
30	0228	0232	160	100	1.1	0	1-2		
			80	100	1.3	0	2	IIIGG	*
			43.25	100	1.7	-	3		

Days without Heliograph observations: Nil

* Other type III observed at same position during day.

COSMIC RAY INDICES

(Neutron Monitors)

JUNE 1974

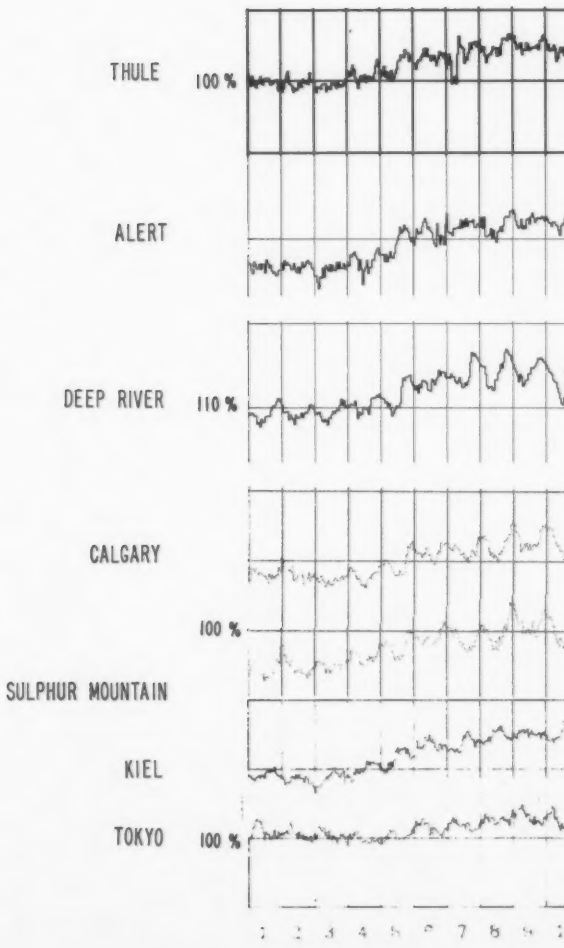
JUNE	THULE Average cts/hr	ALERT Average cts/hr	DEEP RIVER Average cts/hr	CALGARY Average cts/hr	SULPHUR MT Average cts/hr	KIEL Average cts/hr	TOKYO Average cts/hr
1	4385.5	7230.7	6747.6	11597.6	8532.5	6111.7	3510.4
2	4379.4	7238.3	6747.4	11594.3	8549.2	6089.7	3502.7
3	4373.3	7220.0	6749.8	11542.1	8561.1	6098.5	3499.7
4	4405.5	7255.9	6776.8	11583.8	8612.3	6137.0	3491.4
5	4433.5	7324.6	6811.6	11689.1	8684.3	6184.7	3497.6
6	4460.1	7368.8	6862.9	11779.5	8750.6	6244.4	3519.2
7	4463.8	7398.6	6893.0	11797.2	8733.1	6250.2	3525.3
8	4491.3	7393.3	6904.8	11850.8	8780.8	6284.1	3539.5
9	4499.1	7419.4	6906.2	11893.5	8833.8	6295.4	3548.1
10	4479.1	7391.8	6885.0	11853.2	8755.6	6282.9	3525.2
11	4413.4	7300.0	6862.7	11731.5	8725.4	6187.5	3491.5
12	4439.3	7333.2	6850.0	11700.9	8718.5	6191.9	3495.5
13	4387.2	7254.9	6793.6	11602.9	8642.2	6127.1	3480.7
14	4387.3	7242.6	6768.3	11547.9	8581.9	6115.0	3474.2
15	4343.0	7174.9	6699.8	11452.2	8505.6	6076.6	3471.5
16	4308.8	7131.2	6682.3	11383.5	8489.7	6072.2	3474.0
17	4323.9	7150.9	6695.9	11382.2	8503.2	6075.3	3478.9
18	4335.5	7148.7	6721.1	11433.7	8532.4	6082.6	3484.6
19	4351.5	7180.8	6713.6	11447.4	8537.8	6082.0	3483.9
20	4320.8	7113.5	6670.5	11389.5	8466.5	6061.5	3480.5
21	4327.5	7133.4	6678.6	11405.9	8483.6	6063.9	3469.9
22	4352.1	7168.9	6718.8	11431.0	8512.6	6084.5	3483.3
23	4351.0	7172.0	6721.6	11430.0	8513.0	6082.1	3482.7
24	4372.3	7218.5	6735.1	11428.3	8532.1	6095.6	3489.4
25	4394.3	7276.9	6757.1	11533.9	8579.0	6134.5	3502.0
26	4373.0	7237.1	6769.0	11632.6	8588.4	6155.1	3501.9
27	4337.8	7183.0	6697.7	11552.1	8511.2	6114.0	3476.5
28	4365.8	7224.3	6717.3	11589.9	8515.8	6128.2	3474.2
29	4370.6	7217.2	6737.3	11639.6(20)	8565.6	6125.7	3485.3
30	4376.8	7234.7	6745.8	-- (0)	8570.0	6126.3	3479.7
MEAN	4386.7	7244.6	6767.3	11582.4	8595.5	6138.7	3494.0

( ) Number of hours for which data are available if less than 24.

Thule, Alert, Calgary, Sulphur Mountain and Kiel Scaling Factors = 100.
Deep River Scaling Factor = 300.

Tokyo " " = 128.

See *Descriptive Text* for other characteristics.


THULE
100 %
ALERT
DEEP RIVER
110 %
CALGARY
100 %
SULPHUR MOUNTAIN
KIEL
TOKYO
100 %

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

JUNE 1974

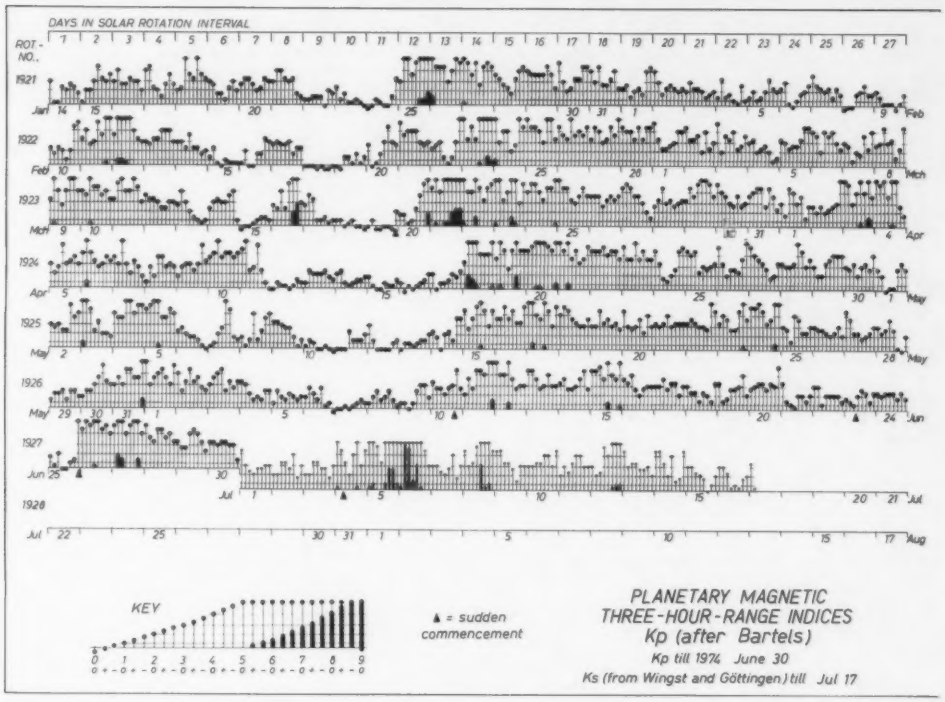
125
Jun 74

GEOMAGNETIC ACTIVITY INDICES

JUNE 1974

Day	Three-Hour Range Indices Kp									Prel Ci	Cp	Ap	aa			
	1	2	3	4	5	6	7	8	Sum				N	S	M	
1	5	3	4-	4	4+	4-	3	5-	31+	1.2	1.2	28	40	38	43 35	
2	4	2+	3+	4+	3+	4-	3-	2+	26	0.9	1.0	18	35	30	38 27	
3	3	4-	4	4+	2+	3+	3-	3+	27-	1.0	1.0	19	34	30	39 25	
4	3+	3	2	1+	2-	1+	2+	2+	17+	0.3	0.5	9	21	14	21 16	
5QQ	1	2+	2-	1+	2	2-	1+	2-	13	0.1	0.3	6	18	9	14 14	
6QQ	2-	3-	2	1+	3-	1-	1	0	12	0.1	0.3	6	16	11	15 13	K
7QQ	0+	0+	1-	0+	1-	1	1+	1	6-	0.0	0.1	3	8	5	5 9	CK
8QQ	1	2-	2+	1+	2-	2+	1+	1-	12+	0.2	0.3	6	14	12	14 12	KC
9QQ	1	1	0+	1	2+	3	3	2-	13+	0.2	0.4	7	20	14	8 26	
10	3+	3-	3-	2	3-	3	4+	3-	23+	0.8	0.8	15	33	19	19 34	
11 D	2	4-	3-	4+	4+	4	5	6	32	1.2	1.3	32	44	52	30 66	
12 D	5	4	4	6-	4-	3-	3	3	31	1.2	1.3	29	47	39	55 32	
13	4+	4+	4-	3-	3	4	3	3	28	1.1	1.1	21	37	42	42 37	
14	3+	4-	3-	3-	3	4-	4+	3-	26	0.9	1.0	18	27	32	21 38	
15 D	4+	4+	5-	4-	6-	4	4-	5+	36-	1.5	1.4	37	47	59	42 64	
16	4-	3+	4	3-	2	3-	3	3	24+	0.9	0.9	16	29	39	43 26	
17	3	3	4-	3-	3+	3+	2	3	24	0.8	0.9	15	29	35	32 32	
18	3	2+	2+	1+	2+	2	1+	3+	18	0.6	0.5	10	20	25	18 27	
19	3+	1+	2-	3-	3-	3	4	2	21-	0.6	0.7	13	32	28	21 38	
20	3-	3	3+	3+	3-	3+	3	5-	26	1.1	1.0	18	32	35	30 37	
21 Q	3+	1+	1	1-	2	2	1+	2	14-	0.3	0.4	7	17	9	13 15	
22 Q	3	3	1	2	2	2	2	1+	16+	0.2	0.5	8	26	14	21 18	
23 Q	2-	1+	1	2	3-	2+	1+	2+	15-	0.3	0.4	7	14	13	10 18	K
24 Q	2+	2	2+	2+	2+	2-	2+	2-	17	0.4	0.4	8	21	17	19 20	
25 Q	2-	1-	2	0+	0+	1	1+	5	12+	0.6	0.5	10	19	15	10 24	
26 D	4+	5	5-	5+	5	4+	5-	4	37+	1.5	1.5	40	56	69	68 58	
27 D	5-	6+	6	4	5-	5	6	4	41-	1.7	1.6	54	69	74	81 62	
28	5-	4-	3+	4+	4+	4-	4	3+	31+	1.2	1.2	26	41	32	37 36	
29	3+	3-	3-	4	4+	4	3+	2+	27-	1.1	1.0	19	30	39	29 40	
30	3+	3+	3	3+	3+	3	3	1+	24-	0.8	0.9	15	27	34	31 29	
									MEAN	0.76	0.81	17	30.1	29.5	29.9	

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

DAY	1973 JUL	AUG	SEP	OCT	NOV	DEC	1974 JAN	FEB	MAR	APR	MAY	JUN
1	19	12	5	5	4	4	17	13	20	17	9	28
2	11	16	6	31	7	2	9	12	18	15	18	18
3	7	7	6	48	5	5	11	8	20	39	24	19
4	4	8	12	12	18	29	13	7	10	35	34	9
5	4	9	15	10	14	17	14	8	18	18	35	6
6	3	13	9	12	9	10	12	7	20	26	6	6
7	3	8	8	6	28	8	2	10	13	18	15	3
8	13	9	8	6	11	7	10	5	17	13	13	6
9	8	5	44	10	12	21	7	4	33	16	11	7
10	6	4	27	21	8	8	14	14	30	28	3	15
11	5	4	12	11	6	8	6	30	32	19	5	32
12	6	5	7	15	4	4	5	40	15	3	5	29
13	8	10	8	17	10	4	5	20	10	7	4	21
14	8	8	4	7	8	6	8	12	16	5	10	18
15	32	4	12	6	8	8	15	4	3	4	30	37
16	15	3	14	30	10	4	15	7	42	4	26	16
17	6	2	10	27	17	6	16	11	9	6	38	15
18	5	4	7	22	19	3	24	1	3	48	24	10
19	10	6	3	20	4	13	9	4	2	39	18	13
20	9	9	12	20	6	29	14	12	23	46	18	18
21	5	6	15	37	23	34	16	23	68	35	18	7
22	6	12	17	20	7	25	5	14	39	31	22	8
23	14	22	63	6	8	18	4	44	42	29	25	7
24	5	46	28	7	26	4	4	29	34	19	39	8
25	9	29	27	5	42	3	50	34	28	20	14	10
26	35	18	25	3	18	4	38	28	20	21	11	40
27	29	26	8	4	14	6	34	26	22	19	14	54
28	14	28	4	20	6	11	18	27	18	23	10	26
29	18	20	4	86	5	19	22		34	19	7	19
30	19	13	4	28	4	15	21		20	16	17	15
31	25	9		19		17	19		24		30	
MEAN	12	12	14	18	12	11	15	16	23	21	18	17

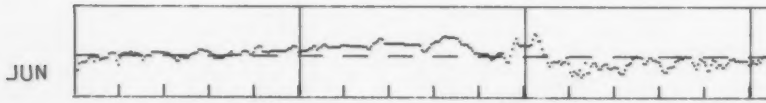
HOURLY EQUATORIAL D

JUNE

NASA/GODDARD SPACE FLIGHT CENTER

(Time-UT)

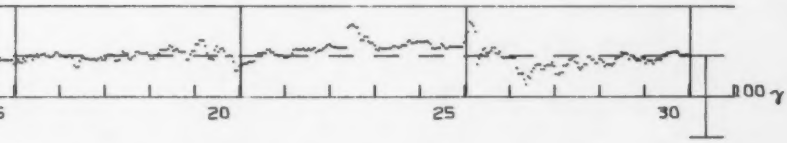
DAY	1	2	3	4	5	6	7	8	9	10	11	
1	-18	-18	-10	-8	-10	-8	-7	-4	-2	-2	-8	
2	-3	2	3	1	2	4	4	-1	3	0	1	
3	1	1	0	-2	-4	-5	-7	-7	-2	0	-4	
4	2	0	-3	-3	-3	-3	-4	-2	0	1	3	
5	9	11	12	10	5	3	3	2	5	6	5	
6	3	6	5	5	7	9	9	12	10	7	9	
7	11	11	11	10	12	12	11	10	10	10	9	
8	13	13	14	13	15	13	14	14	12	12	12	
9	18	17	18	21	23	24	23	21	22	23	21	
10	1	2	3	3	1	-2	-5	-3	-1	2	4	
11	12	11	12	14	21	27	24	17	17	8	1	
12	-20	-24	-19	-21	-23	-16	-26	-22	-7	-21	-20	-1
13	-13	-15	-19	-22	-21	-16	-10	-9	-7	-3	-1	
14	-11	-18	-20	-20	-14	-12	-12	-11	-5	-4	-2	
15	-10	-18	-16	-9	-4	-6	-14	-10	-10	-14	-14	-1
16	-8	-5	-8	-10	-4	-7	-1	1	-1	-5	-1	
17	-2	-2	-3	-3	0	0	-4	-13	-15	-13	-6	
18	-3	1	0	-1	-1	-6	-6	-5	1	5	2	
19	-4	-4	1	1	3	7	7	7	7	8	12	
20	14	14	19	18	17	12	2	-5	-5	-6	7	
21	-14	-10	-9	-9	-7	-7	-9	-6	1	3	2	
22	-3	-1	0	3	7	8	6	7	7	9	6	
23	11	9	10	8	9	9	8	8	10	34	36	
24	7	5	9	7	8	7	9	9	10	12	11	
25	15	16	17	18	15	13	9	7	9	10	10	
26	24	29	41	38	35	27	-12	-3	1	7	9	
27	-3	-4	-4	-16	-23	-23	-22	-30	-36	-25	-28	-1
28	-23	-24	-21	-20	-12	-12	-10	-5	-4	-2	-7	-1
29	-6	-8	-13	-11	-10	-12	-13	-9	-4	-2	0	
30	-9	-6	-6	-7	-10	-6	-4	-4	-4	0	2	



L Dst VALUES (PROVISIONAL)

UNE 1974

12	13	14	15	16	17	18	19	20	21	22	23	24
-2	-3	-6	-4	-4	-3	-3	2	3	3	1	-8	-12
-2	-6	-2	0	-2	-1	4	3	2	4	2	2	2
-4	-3	0	2	3	3	4	7	5	5	4	6	3
5	1	-1	0	1	1	5	6	5	3	1	0	4
5	4	4	6	4	5	7	9	9	12	12	9	4
11	13	14	11	9	9	10	11	10	9	11	13	12
9	7	8	12	15	16	18	21	20	18	15	13	13
12	12	13	13	14	11	7	4	6	8	11	14	16
20	20	17	14	12	14	12	10	8	6	3	3	2
4	2	-2	-7	-9	1	9	16	22	16	12	13	13
0	-9	-12	-8	-6	-8	-7	-5	-10	-7	-6	-2	-10
-11	-8	-9	-12	-15	-15	-11	-9	-9	-14	-16	-14	-13
1	-2	-2	-3	-10	-8	-5	-2	-2	-5	-6	-7	-8
-3	-2	0	-2	-2	-2	-6	-11	-15	-8	-2	-5	-7
-10	-7	-4	-3	-2	-6	-6	-7	-7	-7	-7	-6	-10
2	-2	1	2	3	-1	0	-3	-1	1	4	2	0
-3	-3	-5	-5	-6	-6	-4	-4	-7	-4	-2	-6	-6
1	-3	-6	-2	0	4	5	2	1	2	3	4	0
9	6	7	8	4	3	3	3	-6	-5	2	5	6
11	3	8	9	5	-2	0	1	-2	-9	-19	-19	-13
3	4	2	7	7	4	4	1	-1	-2	1	0	-3
6	9	6	8	10	4	6	7	6	9	11	13	14
38	35	33	32	25	17	19	23	21	17	14	14	12
9	8	11	13	11	12	17	19	15	14	16	17	16
14	11	8	9	11	10	10	11	10	9	10	11	16
3	4	6	9	10	3	1	5	-3	-4	-2	-2	-4
-19	-16	-12	-10	-11	-17	-16	-13	-11	-11	-11	-8	-13
-10	-14	-17	-14	-11	-10	-1	-1	-5	-5	-9	-9	-4
4	2	2	1	-4	0	-2	-4	-6	-4	-7	-2	-4
3	4	2	5	4	5	3	0	0	-2	1	1	1



PRINCIPAL MAGNETIC STORMS

JUNE 1974

OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
SI	60.0N	10	1850	SC*	- 2	+10	+ 1	12(4)	8	70	970	410	13	08
NE	55.1N	10	1849	SC*	5	22	3	12(1)	6	28	175	256	14	08
WI	54.2N	10	1850	SC*	- 1	+58*	0	11(8) 15(5)	6	28	265	75	16	04
FR	49.6N	10	1849	SC	- 1	+ 4	- 1	11(7)	5	25	115	75	14	07
BD	48.9N	10	1849	SC	+ 2	+ 6	--	12(4)	5	24	105	70	17	18
IR	41.0N	10	1851	SC	- 1.4	33	4	12(4)	6	19	112	49	12	22
TU	40.4N	10	18--	..	..	..	..	11(7,8) 12(1,4)	5	15	100	35	13	11
AL	9.5N	10	1848	SC	--	19	--	11(4,8) 12(3,4)	5	8	129	46	12	24
HD	7.6N	10	1849	SC	- 0.2	+20	- 1	11(8) 12(4)	5	8	141	29	12	19
GU	4.0N	10	1853	..	..	..	..	12(4)	5	10	120	20	13	18
AN	1.5N	10	1848	SC	- 0.5	20	16	--	-	6	182	53	12	24
HU	0.6S	10	1850	SC	1	58	6	13(6)	5	8	183	39	13	22
TV	1.1S	10	1848	SC	0.0	18	23	--	-	5	195	115	12	24
PM	18.7S	10	1849	SC	+ 0.5	+13	+11	12(4)	5	7	130	60	21	04
GN	43.2S	10	1850	SC	+ 2	+13	+12	15(5)	7	30	110	150	17	15
TO	46.7S	10	1850	SC	+ 1.5	+16	+ 3	11(7,8) 12(4) 13(6)	5	30	130	40	13	18
KG	56.5S	10	1851	SC	--	--	--	11(8)	6	--	--	--	--	--
SI	60.0N	14	12--	..	..	..	..	15(5)	7	40	560	470	16	12
NE	55.1N	14	12--	..	..	..	..	15(1,2,3,4,5)	5	28	121	179	18	08
HU	0.6S	14	1203	..	..	..	..	15(5,6)	5	6	166	38	15	24
CO	64.6N	15	01--	..	..	..	..	15(5)	7	139	1950	890	16	13
GU	4.0N	15	0802	..	..	..	..	15(5)	5	00	70	20	16	19
HD	7.6N	23	0857	SC	- 0.6	+22	- 1	23(4)	4	5	70	11	24	22
CO	64.6N	25	2329	SC*	+31	+63	+47	26(3,4) 27(3,4)	7	205	2070	1040	29	19
SI	60.0N	25	2329	SC*	+ 8	+74	+ 1	27(4)	8	120	1340	780	29	19
NE	55.1N	25	2329	SC*	6	81	4	27(2,3,4)	6	55	238	390	01	08
WI	54.2N	25	2330	SC*	- 1*	105	8	27(6,7)	6	31	250	95	29	21
FR	49.6N	25	2329	SC*	+ 4	+88	-10	27(2)	6	24	142	98	01	13
BD	48.9N	25	2329	SC*	- 3	+78	- 5	27(2)	7	45	130	100	01	12
EB	43.9N	25	2328	SC*	+ 2.2	+54	+28	25(8) 26(2,4) 27(2,3,7)	5	15	131	86	28	24
IR	41.0N	25	2330	SC*	- 2.8	19	3	26(3)	6	18	161	66	29	22
TU	40.4N	25	2329	SC*	- 3	+46	+ 4	27(2)	6	20	105	35	30	21
SJ	29.9N	25	2330	SC	+ 2	+23	+ 8	27(2)	5	6	97	20	28	06
AL	9.5N	25	2329	SC	- 0.3	33	- 5	25(8)	5	5	140	35	26	21
HD	7.6N	25	2329	SC	- 0.3	+36	- 2	26(1,2,3,4) 27(2)	5	4	152	32	28	23
GU	4.0N	25	2329	SC*	0.8	31	14	27(3)	5	10	170	40	30	14
AN	1.5N	25	2329	SC	- 1.0	38	14	--	-	3	181	58	26	21
HU	0.6S	25	2329	SC	1	42	7	26(5,6)	5	6	157	33	28	02
TV	1.1S	25	2329	SC	0.0	31	47	--	-	4	213	--	26	21
PM	18.7S	25	2328	SC*	- 0.2*	+22	+20	27(2,3,4)	5	5	160	60	01	00
GN	43.2S	25	2332	SC	+ 5	+12	+25	27(4)	6	20	130	120	30	14
TO	46.7S	25	2329	SC*	+ 1*	-22*	- 1	26(4) 27(4)	6	32	160	60	28	16

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

JUNE 1974

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS (by Dr. A. Romana)

The meaning of the station symbols is given in the IAGA-Bulletins nr. 12 and 32. Times of ssc and si are mean values. If given by ten or more stations they are underlined.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc)

10 1850: A: SO SI WI DB VI LG TI QU LM; B: DO WN CF HB OT IK EB? TL KS SZ GN KG; C: NI KA

23 0858: A: VI OT PE SZ; B: SO WN IK TI QU; C: WI DB CF KG (si: A: LM; B: DO KA GN)

25 2330: A: DO SI WN WI DB VI CF OT LG IK EB? CI TL PE TI QU LM DU; B: NI KA SZ GN CZ (bs: A: SO - bp: B: KG)

Sudden impulses found in the magnetograms (si)

n o n e

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

02 0426 - 0435 KA

03 1526 - 1533 SZ

03 1614 - 1625 SZ

11 1525 - 1536 SZ

13 0757 - 0812 SZ

14 0752 - 0801 SZ

23 0515 - 0630 KA

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

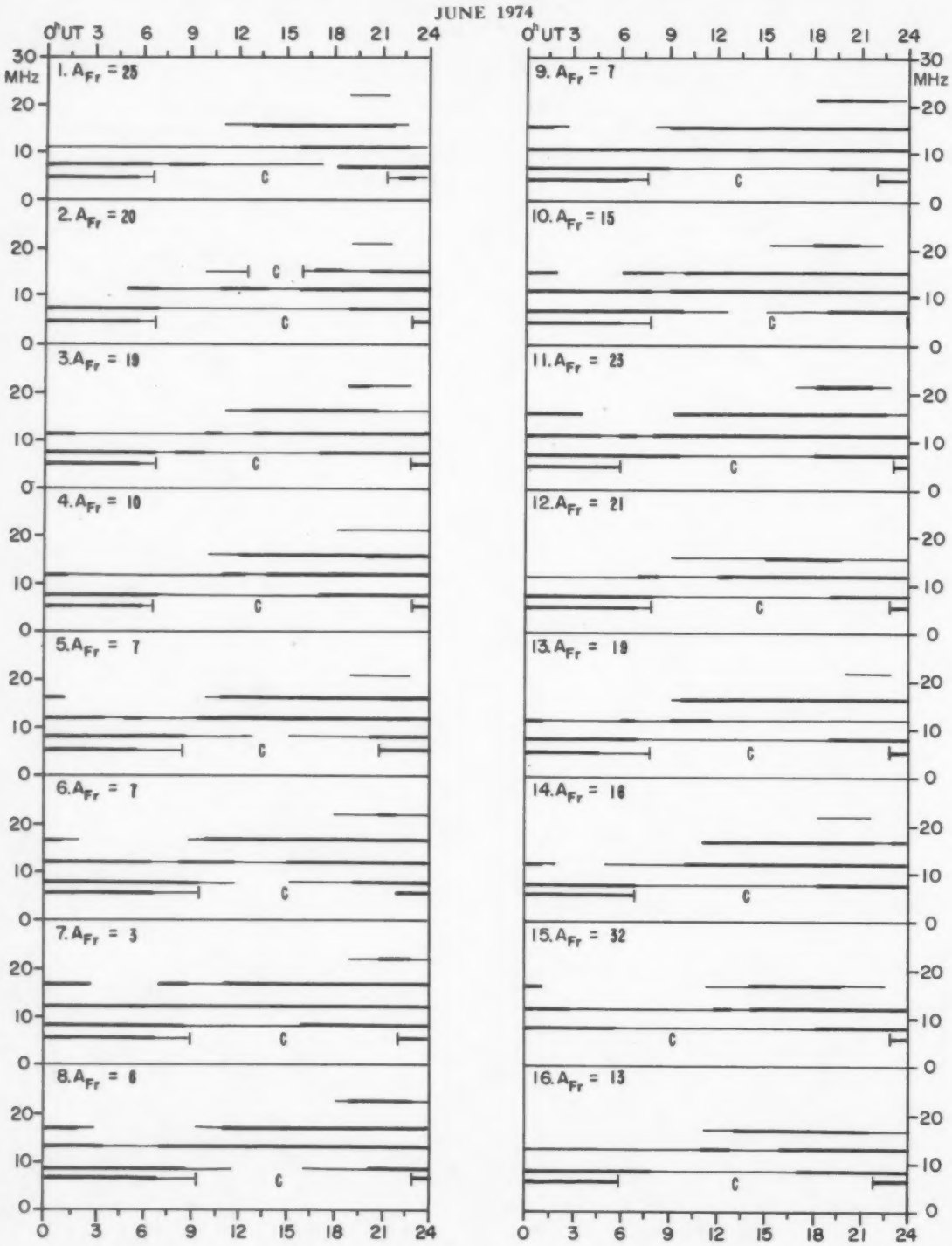
JUNE 1974

North Atlantic

JUN 1974	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC-REPORTS) FOR WHOLE DAY	NORTH ATLANTIC								GEOMAGNETIC INDICES		
			6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				K_{FR}		A_{FR}
			00 TO 06	06 TO 12	12 TO 18	18 TO 24	02	08	14	20	HALF DAY (1)	HALF DAY (2)	OBSERVED
01	5+	5	5+	4+	6-	6-	5	5	6	5	(4)	(4)	25
02	6o	6	6o	5o	6o	6+	5	5	5	6	(4)	3	20
03	6o	6	6o	5o	7-	7-	6	5	6	5	(4)	3	19
04	6+	6	6o	6-	6o	7o	5	5	6	6	3	2	10
05	6+	6	7-	6+	7-	6+	6	6	6	6	2	2	7
06	7-	6	7-	6+	7o	7o	6	6	7	7	2	1	7
07	6+	6	6+	6+	6o	7o	7	6	7	6	1	2	3
08	6+	6	7-	7-	6o	6+	6	6	7	7	2	1	6
09	7-	6	6+	6+	6+	7o	6	6	6	7	1	3	7
10	7-	6	6o	6o	7o	7-	6	6	6	6	2	(4)	15
11	6+	5	6o	6o	7-	6o	5	5	5	5	3	(4)	23
12	5+	4	5+	5o	5o	6+	4	4	6	5	(4)	3	21
13	6o	4	6+	6+	6o	6o	5	5	6	5	(4)	3	19
14	6-	4	6-	5o	6-	6o	5	5	6	6	3	3	16
15	5o	5	6o	3+	5o	6-	6	5	6	5	(4)	(4)	32
16	6-	5	5o	5+	6o	6+	5	4	5	6	3	3	13
17	6+	6	6o	6+	7o	6+	6	6	6	6	3	2	14
18	6o	6	6o	5+	7o	6o	6	6	6	6	2	2	10
19	6o	6	6+	5+	6o	6o	6	6	6	6	2	3	11
20	6o	5	6+	5o	6o	6+	6	5	5	6	3	3	17
21	6-	5	5+	5+	6-	6+	5	4	6	6	2	2	6
22	7-	6	6+	7-	6+	7-	6	6	6	6	2	2	8
23	6+	6	6+	7-	7-	6+	6	6	6	6	2	2	7
24	6+	7	6+	6+	6o	7-	6	5	6	6	3	2	10
25	6o	7	6+	6-	6+	6-	6	6	6	7	1	2	9
26	5+	6	5+	5-	6-	5+	6	4	4	5	(5)	(4)	32
27	5o	4	5o	4o	5+	5+	4	4	5	4	(5)	(4)	37
28	5+	4	5+	5o	5+	6o	4	4	5	5	(4)	(4)	24
29	6-	5	5o	6o	6-	6o	5	5	6	5	3	3	18
30	6o	5	6-	6o	6-	6+	6	6	6	6	3	3	15

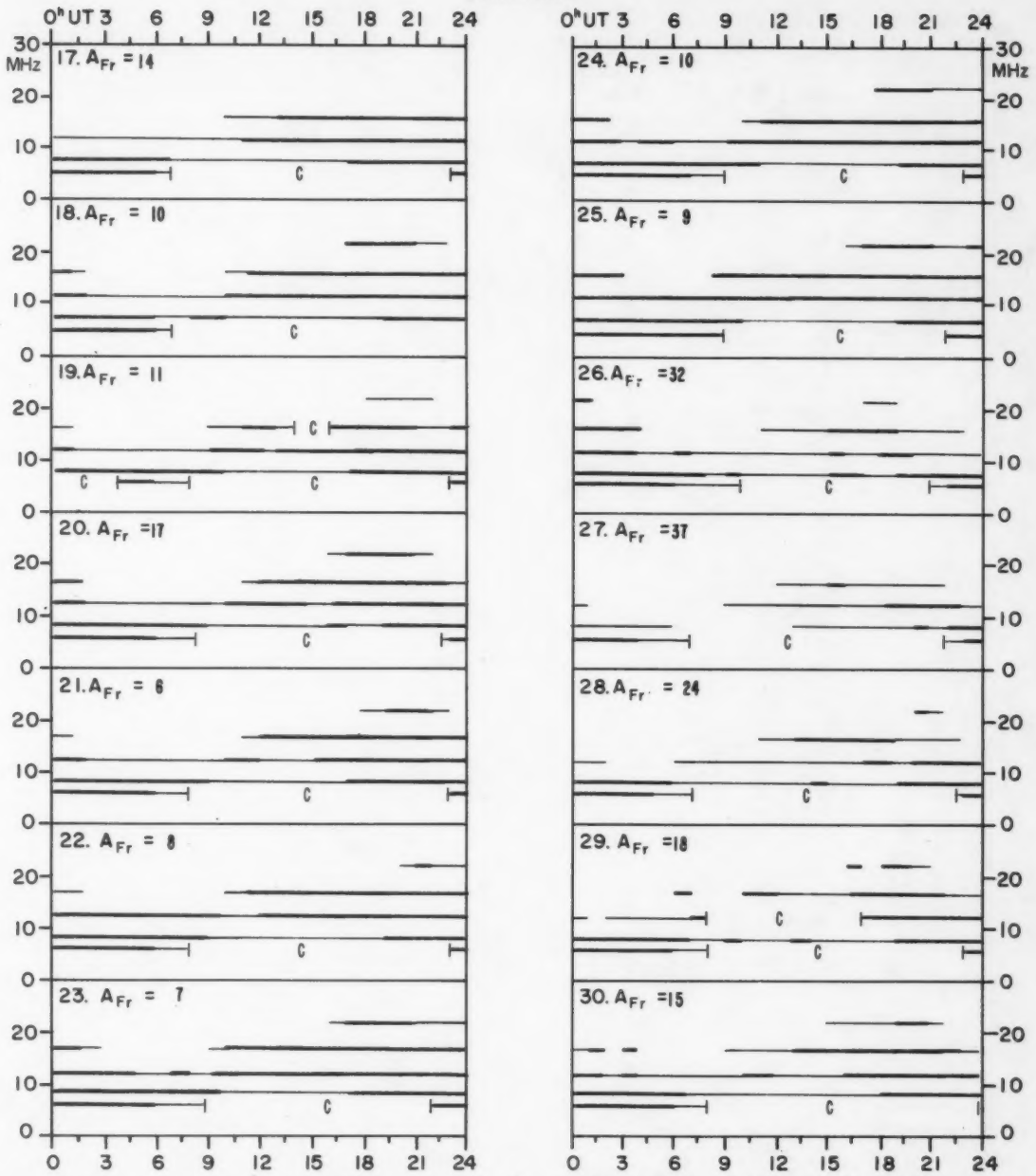
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1974



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1974



Field strengths from five frequencies, 6.425, 8.542, 12.813, 17.084 and 22.378 MHz, observed on a Lüchow - Halifax circuit are represented above. Heavy solid lines represent field strengths ≥-12 dB above 1 μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line.

Adapted from Observations by Deutsche Bundespost

RADIO PROPAGATION QUALITY INDICES

JUNE 1974

Calculated from the records of four frequencies
on the circuit Lüchow - Halifax (Germany - Canada)

Date	Day	Night	D+N
1	4.5	3.6	4.0
2	5.2	4.5	4.6
3	5.0	4.3	4.4
4	6.2	5.8	5.6
5	6.0	6.6	5.6
6	6.5	7.6	6.4
7	7.5	7.0	6.6
8	6.4	7.3	6.2
9	7.3	7.0	6.7
10	7.4	7.4	6.8
11	5.8	3.7	4.8
12	4.7	3.9	4.1
13	5.6	3.9	4.7
14	5.4	4.2	4.5
15	4.5	3.6	4.0
16	4.7	3.8	4.2
17	5.7	4.7	4.8
18	6.0	4.7	5.2
19	5.7	5.0	5.0
20	5.6	4.5	4.9
21	5.5	5.5	5.2
22	5.8	6.1	5.4
23	6.6	5.8	5.9
24	6.4	6.5	6.0
25	6.5	6.0	5.8
26	3.1	1.2	2.4
27	2.7	2.5	2.5
28	3.8	3.4	3.6
29	4.5	4.0	4.1
30	5.0	5.0	4.8

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AMERICAN REVOLUTION BICENTENNIAL
1776-1976